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APRIL 1960 30¢

Motor Trend

60 CORVAIR
'CAR OF THE YEAR!'



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KARTING!**

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Began...Worldwide
Reports...*

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TESTS: Pontiac, Rambler, Mercury, Dodge

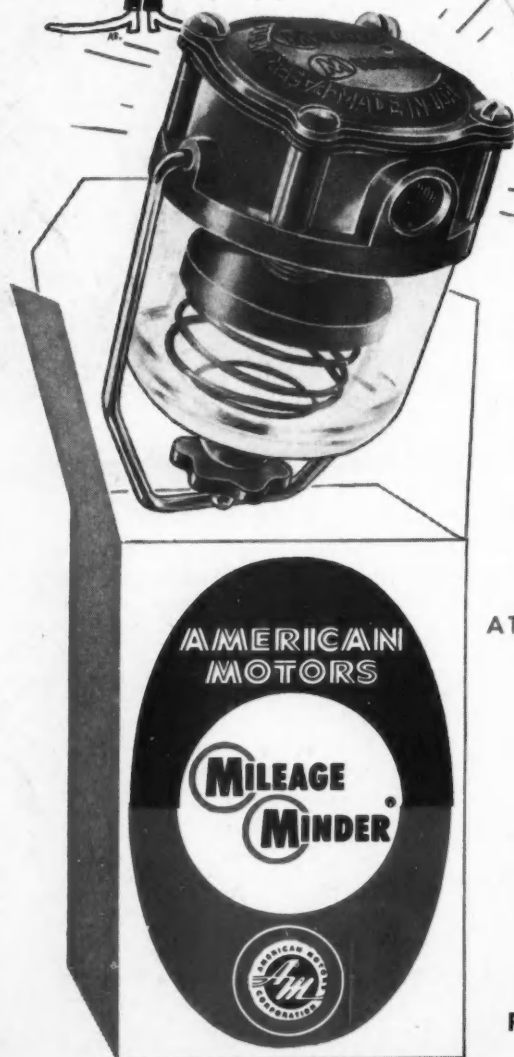


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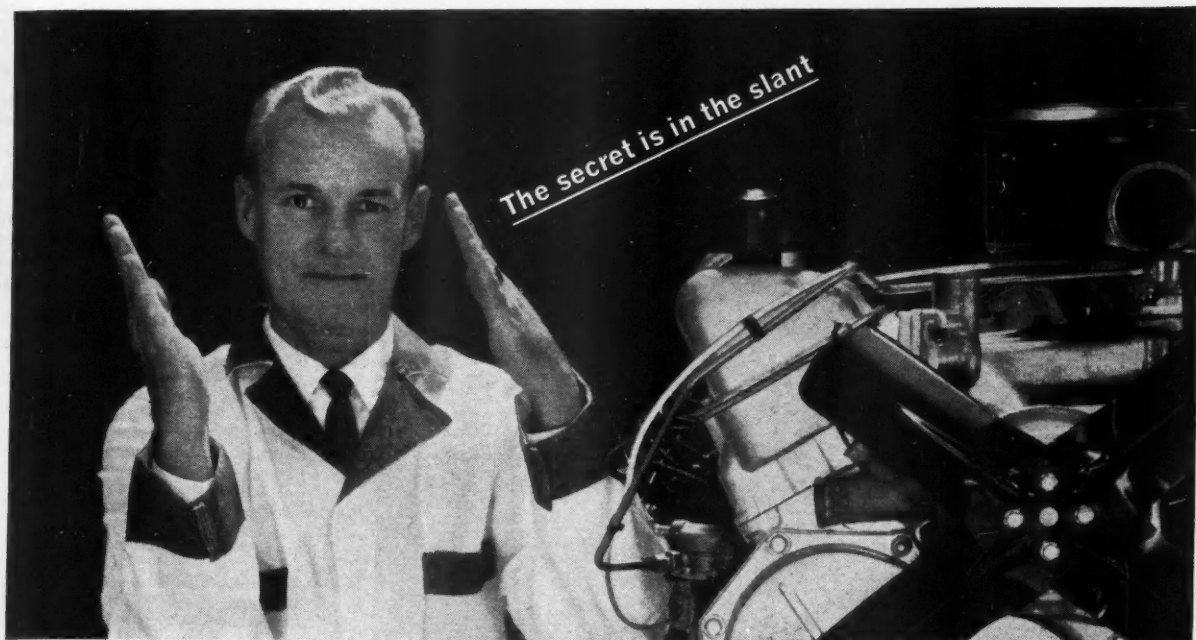
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*New kind of six with get-up-and-go
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Gives you 20% more passing power. Saves you 15% more on gas (like paying 4¢ less a gallon).

The six is in power again—put there by Chrysler Corporation engineers. Here's an engine that delivers 20% more passing power than previous sixes and gives you 2 or 3 more miles per gallon than last year's six. It's as if you're getting your gas 4¢ a gallon cheaper.

This new engine is inclined at a 30° angle to

permit a new, larger manifold system. Six long cast aluminum tubes guide fuel and air to the cylinders to give you performance and efficiency sixes never knew before.

You can feel the difference in this new six. It runs as smoothly as a V-8. One reason is the added efficiency. Others are an extra-rigid crankshaft and new engine mountings more accurately placed, more noise-reducing than any before.

Yes, this is the six with get-up-and-go that goes easy on gas. It's available in Plymouth and Dodge Dart models. Visit your neighborhood dealer for a test drive soon.

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4 MOTOR TREND/APRIL 1960

COVER: Demonstrating the thrills which have made karting a popular new sport and created a new industry, Duffy Livingstone takes his front-engined experimental kart around the track. Ektachrome by Bob D'Olivo. In upper right corner is the Corvair, winner of MT "Car of Year" award.



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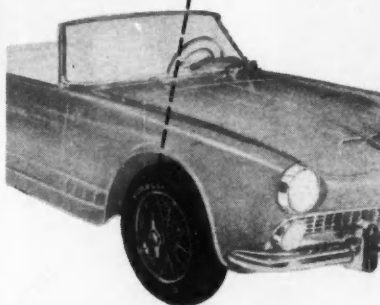
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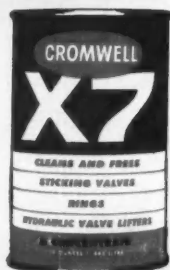
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Letters | FROM OUR READERS

REAL PIECE OF DESIGNING

Gentlemen:

In my opinion the Corvair is the only real piece of design work that has come out of Detroit since the LaSalle. We can only hope that the effort will be appreciated by the public, and that the Corvair trend will become firmly established.

David Hamilton

Venice, Fla.

A PAIR OF ACES

Editor:

The new compacts bring to mind an earlier compact—the Aero Willys of six years ago. I bought one of these in 1953 and since then it has given excellent service and required no care beyond normal maintenance.

The Willys died an undeserved death, but Detroit has finally produced a replacement for it in the Corvair. A glance at the specifications will show that except for height, the two have almost identical characteristics. The success of the Corvair goes to show that the Willys was just six years too soon.

I am now the happy owner of two excellent practical-sized cars—a 1953 Willys and a 1960 Corvair.

J. Reese Brown, Jr.

Pasadena, Calif.

FOR EVEN MORE APPEAL

Gentlemen:

I would like to suggest a few ideas that would make the compact cars even more appealing to the public:

For the three new compacts—captive-air spare tires for more luggage space (especially Corvair), better quality control (Valiant), an optional power package (to compete in rallies or for a bit more power), and finally, an optional sunroof.

In the Rambler American I would like to see the ohv six added to the line (detuned a bit) to complement the existing L-head six, also the addition of a sunroof or hard-top.

Ken Anderson

North Natick, Mass.

BATHTUBS AND ANT EATERS

Editor:

As the years pass and the Big Three are seen to copy six- and seven-year-old Nash and Studebaker products, we independent owners just sit back and remark, "Now, who's driving the 'bathtubs' and the 'ant eaters'?"



Meanwhile, off in some minor-make showroom stands honest quality, real owner satisfaction, economy you can bank and lasting design!

G. F. Reynolds

Denver, Colo.

LET'S YOU AND HIM FIGHT!

Gentlemen:

In the February MOTOR TREND Wendell R. Brainard stated that Valiant, Corvair and Falcon are copies of Rambler and that Rambler outperforms them in speed and economy.



I can hardly agree because I know that Valiant especially gets better performance. And if Rambler is so great, why don't they have a "tilted six" or an aircooled rear engine?

As for not having overdrive you must consider that Valiant, Corvair and Falcon are in their first year and Rambler has been on the market for some years now and still has an L-head six.

Mind you, there is nothing wrong with being a Rambler fan, but they are by no means the best of the American economy cars.

Tom S. McGowan

Medford, N.J.

ANOTHER EINSTEIN?

Gentlemen:

In your January issue, you state that the horsepower of Rolls-Royce is never given. However, using the formula $H = Nd^2 \cdot 4$ (N being the number of pistons, d^2 being the diameter of the pistons squared) you can arrive at the horsepower of a Rolls-Royce algebraically. Multiply the number of pistons by the square of the diameter of each piston, and that result by 0.4. This will give you almost the exact horsepower.

Thomas H. Pope

St. Louis, Mo.

POOR MAN'S CAR

Dear Sir:

When one compares the Ford Falcon with the Chevy Corvair, I wonder if GM haven't missed the boat.

First of all, the Falcon gives five to six more miles per gallon. Second, quality on the Falcon body is much better. Third, the Falcon is a simple car that almost anyone can work on.

Add this all up, and the Falcon is the car for the poor man to buy.

Bob Lassinger

Evans City, Pa.

UNIT BODY—BUT DIFFERENT

Dear Sir:

I have been interested in the letters about the Chrysler Airflow being the first American car with a unit body.

I drove a 1936 Imperial C-10 Airflow sedan for 11 years. It was a good car but did not have unitized construction as we understand it today. It had a complete frame

continued on page 8

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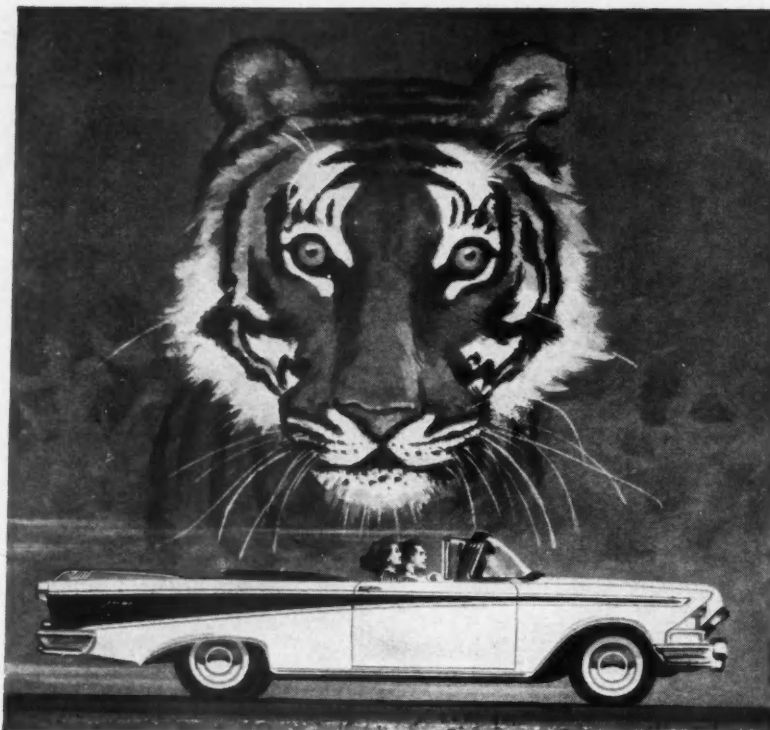
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WHAT A DIFFERENCE TWO CYLINDERS MAKE! THAT'S WHY YOU'LL LOVE THAT LARK V-8

In the field of domestic engines, two more cylinders make the difference between adequate transportation and spirited performance ➤ And sometimes performance is fun, particularly when the price is just a little more than the "6" ➤ The Lark V-8 in standard form pulls 180 hp at 4500 rpm and 260 ft. lb. of torque at 2800 rpm. With optional 4-barrel carburetor and dual exhausts, you get 195 hp at 4500 and 265 ft. lb. at 3000 so that drivers can turn zero to sixty in just over nine seconds ➤ Economical, too! In last year's Mobilgas Run, The Lark V-8 with automatic transmission topped all other eights ➤ The Lark V-8 is rugged. It runs on five massive main bearings and (here's the hooker), piston travel per mile in high gear (3.31 rear) is only 1380 feet. Engine revs per mile in high gear is an easy 2550 ➤ See your Studebaker Dealer and try The Lark V-8. You'll love it!

LOVE THAT **LARK** *BY STUDEBAKER*



A Dyna-Glas muffler gives your car the deep purr that says POWER—and economy, too

Install a Dyna-Glas on your car—and then get set for the driving thrill of your life! The straight-through design of Dyna-Glas cuts back pressure to virtually nil, unleashes *all* the power in your engine. Settle back at the wheel and enjoy the new performance of your car. A feather-light touch of the throttle presses you back in your seat with zooming getaway—sweeps you effortlessly up hills—swirls you along the level stretches like a breeze.

For a superlative straight-through muffler, ask to see the exciting premium-quality Super-G muffler.

Best of all, your engine is unconfined, exhaust gases rushing smoothly out, fuel and air feeding in evenly and efficiently. Despite the increase in horsepower—you still improve your gas mileage very noticeably!

And there's no harsh "hot rod" blare—only the deep mellow tones that mean new power and new economy. There's a Dyna-Glas specially designed to fit your car. Get yours soon and discover the real pleasure of driving.



1. Heavier double-wrapped outer shell for longer life
2. Fiberglass packing allows only deep mellow tones through
3. Straight-through 2-in. tube for more power
4. 16 gauge spun-locked blowout-proof outer heads
5. Precision-sized nipples for easy installation
6. Rich gold color

AT YOUR FAVORITE DEALER
OR AUTOMOTIVE STORE

Dyna-Glas

GOERLICH'S INC.
Dept. 16-D, Toledo 1, Ohio

Letters *continued*

—light but strong enough to hold the running gear—spring hangers, bumpers, engine supports, etc. The body was bolted to the frame rails at 10 or 12 points on each side so that the frame and body acted as a unit.

The underbody rusted badly, and I finally had to give it up.
Henry H. Keef
Rochester, N.Y.

FALSE RATING?

Gentlemen:

I wonder what is the use of the rating Stopping Distance—Stop after maximum acceleration to end of 1/4-mile. This rating gives a false impression, as it penalizes a car that has accelerated to a higher speed. Ernst Berger
Detroit, Mich.

You can't put brakes from a little car on a big car. To equate engine against brakes, you stop from a standing quarter. Cars with higher speed capability must have matching stopping capability. If not, the car is unsafe.
—Editors.

WE DON'T BELIEVE IT!

Sirs:

In your February issue you tell of the Aston Martin DB-4 accelerating from 0-100 mph in 20 seconds and also stopping within that time. Besides myself, everybody else who has read this article feels it is next to impossible! Nobody believes it!

Most likely the car would have to be pretty heavy to get off the line and get some traction, but in this case it seems as if the weight would be a burden on the top end.

Nobody can figure this odd machine out. Please explain!

Andy Zavodney
The explanation is that it does it! We've seen it—Editor.
Millersburg, Ky.

A FEW CORRECTIONS

Gentlemen:

I was amused to see the story regarding the Aston Martin DB-4 in your February issue. Unlike most good stories, this one is not apocryphal. It is true in substance, but may I be allowed to correct certain points of detail?

In the first place, I was not driving the car—David Brown was. Secondly, the engine speed coinciding with the gear lever vibration was not 5500 rpm but 5800, and, thirdly, the corresponding road speed was not 125 mph but 135.

J. Wyer
Aston Martin Lagonda, Ltd.
Director & General Manager
Middlesex, England

NOT VERY PRACTICAL

Dear Sir:

I was very much interested in the article "Two New Engines," in the February issue. I admire the ingenuity of the inventor, John Hagerty, who is now working on his solid fuel engine, but I believe his engine will not be practical because of the tremendous amount of solid fuel that would have to be carried and used. There is also the problem of the exhaust residue from the solid fuel.
Harold Wahle
Niles, Ill.

WHAT'S SO GOOD ABOUT SMALL CARS?

Dear Sir:

I have a 1960 Chevy Biscayne two-door sedan. It is a Six with stick shift, no overdrive. My gas mileage is 22.7 mpg, and that takes in city driving and short runs.

continued on page

"WALKING" SUSPENSION

One of the most intriguing—and rewarding—features of Chevrolet's revolutionary Corvair is its superbly smooth, supple ride. The reason for it lies in a suspension system unique among U.S.-built compact cars: independent suspension at all four wheels.

Here's how it works: each wheel on a Corvair rests on its own deep coil spring, which absorbs road shocks independently of the other wheels. Say, for example, that you're cruising along a choppy dirt road and your left rear tire suddenly sinks into a rut. In any other U.S. compact car, the right rear wheel would react as violently as the left to that jolt—which is only natural, since both rear wheels are locked together on a single axle. But in a Corvair, the wheels are divorced from each other, so you virtually "walk" over the ruts.

You can see what this means to your ride. You travel as smoothly in a Corvair as you would in a much heavier car—but you don't have the extra weight to haul around. Actually, though, the only way you can really appreciate Corvair's



exhilarating smoothness is to experience it (you couldn't do better than a rough, winding back country road for the test).

This "walking" suspension helps keep your Corvair glued firmly on the pavement for extra traction and control on slippery roads. What's more, those resilient coil springs won't squeak, which means a quieter ride. And Corvair's independent suspension cushions the car's overall weight for a soft, comfortable way of going.

This 4-wheel independent suspension is, of course, a tremendously important advance in the design of compact cars. A five-minute turn at the wheel will show you just how important. The man to see is your Chevrolet dealer—and there's no better time than now. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

Technically speaking, Corvair is probably the most fascinating car to come down the U.S. pike in the past 49 years. Here are some of the engineering advances you'll find: an air-cooled "pancake" six engine, mounted in the rear . . . unit-body construction . . . an amazing Unipack combining engine and transmission in one compact package.

corvair
BY CHEVROLET



DIRTY SLUDGE DID THIS DIRTY WORK: Sludge clogged this oil intake, preventing oil from circulating. Result: engine wear, poor mileage, finally a major overhaul. That's why you...

ADD BARDAHL

Unburned carbon, varnish and dirt foul up oil and engine parts. BARDAHL, added to your oil, cleans out this power-robbing sludge. And BARDAHL lubricates like no other oil—won't burn off or squeeze out. Your car runs better... gives better mileage. Add BARDAHL every oil change.

WORLD'S NO. 1 SELLER AT STATIONS EVERYWHERE

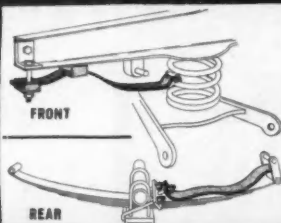


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HELLWIG ADJUSTABLE HELPERS

eliminate the rough ride from worn shocks and sagging springs—give new stability to all cars—increase carrying capacity. Easily installed. Passenger cars—pickups



Ask your dealer about the new HELLWIG '60 models—or write direct to factory.

Distributors: Write for full information on this great profit line.

HELLWIG PRODUCTS CO., INC. 6231 San Fernando Rd., Glendale 1, Calif.

Letters *continued*

the open road at 60 mph. I have 1600 miles on the speedometer, so you can see the car is hardly broken in.

According to your road test of a Corvair, your gas mileage was no better than mine on a car that weighs 1200 pounds less. Also my Biscayne cost only \$200 more than a Corvair. Isn't it worth it?

Why is the public so small-car crazy? I don't get it!
Virgil F. Crofter Mt. Vernon, Iowa

IDEAL '60 CAR

Gentlemen:

... Just give me a Ford Fairlane body, Plymouth chassis and suspension, and a ram-tuned slant six engine.
C. S. Findling Mattapan, Mass.

THIS IS SALESMANSHIP?

Gentlemen:

When the Valiant first came out, I went around to three different dealers, talking to five salesmen. One of the things I was interested in was the size of the engine.



Now, believe this if you can—not one of the five knew the engine displaced 170 cubic inches. All they could do was mumble something about 101 hp.

That was an easy one—if you really want to throw them, walk into any car showroom, point to any car on the floor, ask the salesman, "What is the rear axle ratio of that car, and what optional ratios are available?" Maybe one out of 100 will know.

This is one thing I believe is helping the imported car dealer—at least most of them have a fairly decent knowledge of the car they're handling.

John Mifflin

N. Atlanta, Ga.

A WORD TO THE WISE

Editor:

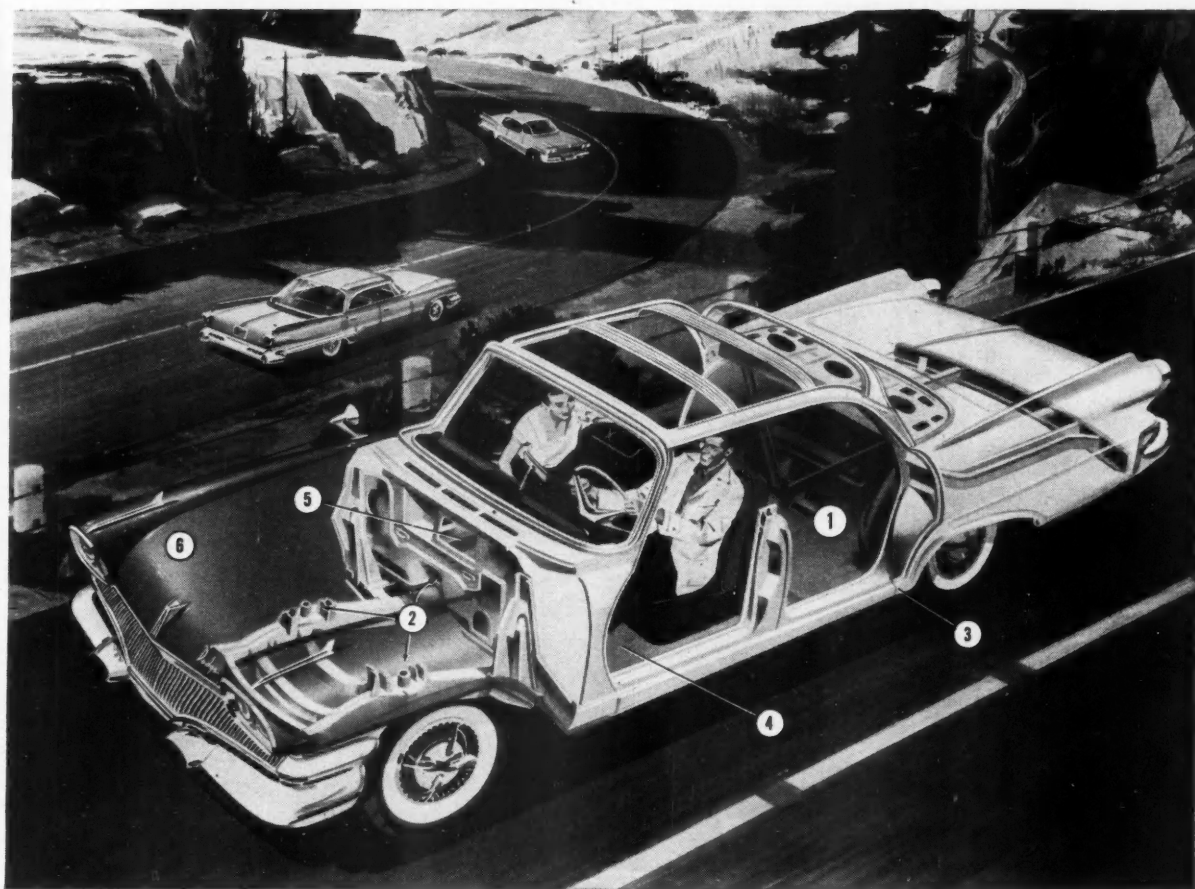
I really enjoyed your article on radar in your January issue, and I'd like to say that if any of your readers live in St. Louis or ever pass through this city, they should



tune in to WIL-RADIO (1430). The station reports all radar traps to their listeners daily. One way to beat the trap. More stations should do this.

A rich reader St. Louis, Mo.
(No speeding tickets in the last four years)

Dodge Dart Is Sound-tight, Weather-tight, Built To Stay Tight!



There are many reasons why Dart rides and feels like it costs hundreds of dollars more than it really does. To build this new kind of low-priced car, Dodge engineers used a striking series of important advances never before available in the low-price field.

1. UNIBODY CONSTRUCTION—Dart eliminates conventional two-piece body-frame construction. It's welded into a single unit with stressed-strength. One-piece construction eliminates body squeaks and rattles. It's far stronger to begin with—and it stays that way.

2. FREE-FLIGHT POWER—New three-point suspension cradles engine in space—actually floats it on supple steel coils and rubber blocks. Sound and vibration are completely isolated from passenger compartment.

3. SPECIAL WEATHER SEALING—All body seams and joints are ship-lapped to prevent leakage. Seams are further sealed with a special gun-

applied mastic material that stays pliable—won't dry out or crack with age.

4. NEW SOUND-DEADENING TECHNIQUES—Under hood, roof, and floor mats, heavy layers of special felt and rubber acoustical materials soak up road and wind noise. These sound deadeners are eight times as effective as the best of conventional sprayed-on materials.

5. SPECIAL SEALING FOR WIRES AND CONTROLS—Instead of punching separate holes in the firewall for entrance of control cables and wires, Dodge engineers routed major units through an ingenious self-sealing key-hole. There, special die-cut rubber blocks simultaneously position the wires and seal out drafts and noise.

6. COMPLETE RUSTPROOFING INSIDE AND OUT—Every Dart Unibody is deep-dipped seven times in tenacious rust preventives. This deep-dipping completely seals every crack and seam, inside and out. Final finish is then added—two coats of special primer, two coats of lustrous, long-lasting Lustre-Bond baked enamel.

AMERICA'S FIRST FINE ECONOMY CAR

DODGE DART



NOW DODGE BUILDS TWO GREAT CARS: DODGE DART • '60 DODGE

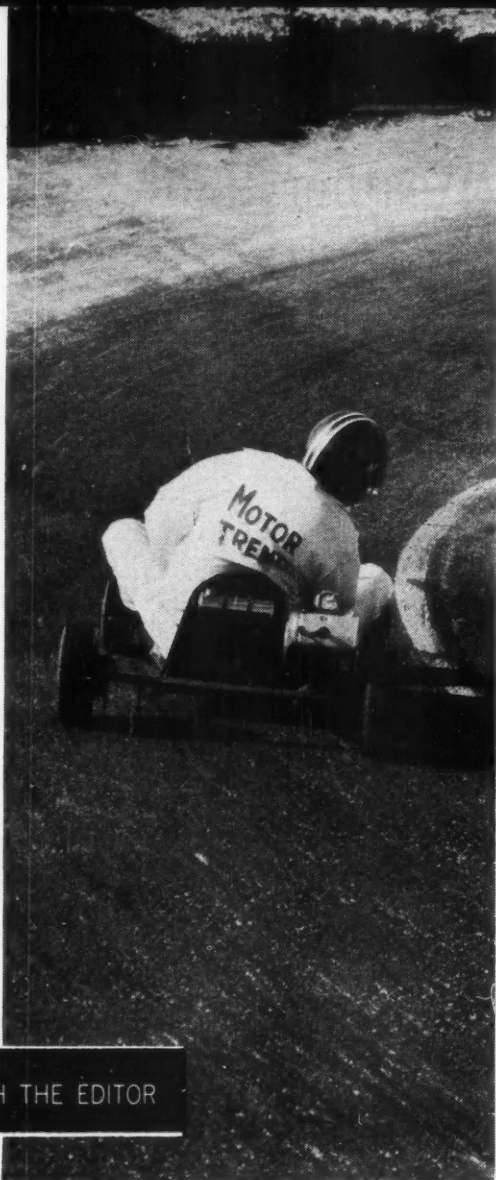
MOTOR TREND/APRIL 1960 11

KARTING IS THE MOST FUN I've had since I first slipped behind the wheel of my dad's Star and took off across a celery field to prove to myself I could drive. It's the most infectious motoring sport I've ever encountered: you get around people who do it and you can't help feeling their enthusiasm; you drive a kart for the first time and your enjoyment bubbles out all over, spilling onto everyone around you. It's fun with a capital F.

Kart, incidentally, has become the proper name for these buggies that run an average four feet in length and 2½ feet in width, have only frames and wheels, no suspension and, usually, a one-lung aircooled engine. The name, a little over three years ago, started out as Go Kart, was later changed to Go Kart when the Go Kart Mfg. Co. registered the name, and has since become known as Kart.

My first time on a kart ("on" is right, since there's nothing around you to give you the feeling of being "in") was arranged by Spence Murray of Go Kart and Art Ingels, who supplied the original kart. (See page 39 for the story on that and the fantastic growth of the karting sport.) And with Duffy Livingstone (he of the unorthodox front-engine kart on the cover) present to warm up the karts and give me driving pointers, my day of fun began.

When you first plop down into the hard seat, legs akimbo like you're going to twirl a couple of sticks between your feet to start a fire, you think, "What do they like about this?" You get shoved off, the engine coughs, sputters, coughs, then begins to putt-putt-putt in a healthy, noisy



Driving Around WITH THE EDITOR

staccato. You gingerly push down on the throttle with your right foot and find that the tiny engine has power after all.

Pretty soon you're pushing down hard enough to feel the wind whistle by and you look down to see the ground rushing by at 25 mph just inches below!

Then, you come to your first turn, and remember that—unlike the big Detroit car you drove to the raceway—you need only to turn the wheel a few inches to get around the corner. You remember too that there's only ¼-turn lock-to-lock and that if you used it all at a good clip you'd either spin out, go sideways, or flip! (This original kart had ⅔-turn lock-to-lock, but that was considered much too slow.)

Pretty soon you get the hang of it—pushing the throttle with a bit more verve, braking oh-so-gently with the left foot before entering a turn, sort of quickly shifting your bottom to "kick" the rear end around before you enter a corner, lean-

ing your body into the direction of the turn, straightening up as you leave it and even becoming accustomed to the cramped position.

As with all sports, there's a learning period; impatience seems to be the bane of beginners. I was warned not to get too cocky and thought I wasn't, yet came plenty close to spinning out when I shouldn't have. Moving up from the original kart to a current twin-engine kart was a big step in one day. It's not advisable for the beginner, but I had (and have) lots of catching up to do.

Karting is not only a big sport and industry in this country, but has rapidly spread across both oceans. It has every indication of becoming worldwide in scope. To find out just *how* wide we asked for reports from all of our overseas contributors.

FROM ENGLAND, Gordon Wilkins reports that karting "... is still in its early stages ... The Royal Automobile Club has established rules and fixed classes, but the high purchase taxes are making

continued on page 18



Getting some pointers on karting from Spence Murray, one of the first proponents of the sport, your editor waits anxiously for a ride on a twin-engine Go Kart. This came after a number of laps in the one-engined, original kart built by Art Ingels. Spence, incidentally, authored our story on karting and helped assemble the Karting section.



To get more experience behind the wheel of Corvairs (and to help finalize our selection of Corvair as "Car of the Year"), we took the new club coupe over snow-capped mountains and down to the sands of the desert. In addition to other late modifications (deeper fan pulleys, modified hand brake), the car had a revised carb setup, which enabled better gas mileage than with our original test sedan. At an average of 43.2 mph on the highway, the coupe with Powerglide gave 21.6 mpg. Surprisingly, in heavier traffic, at an average of 40.3 mph, it gave 22.5 mpg—a 1.2 mpg improvement over our Corvair sedan with automatic transmission.

Experts who know engines choose Set 15 world's records at



The checkered flag flies. The run is over. After 12 hours of full-throttle driving, the car (an EX219 Austin-Healey Sprite) is back where it started—the holder of 15 newly set World's Records. (Records are in Class G, for cars of 750 cc to 1100 cc engine displacement.)



Before the grueling run, Champion engineer Dick Jones (center) helps Austin-Healey mechanics select the right spark plugs. (A standard Champion type was used.) Each plug had to fire over two million times in 12 hours—without a single misfire. And without overheating! The Champions performed perfectly.



Timing equipment used to clock the record run is so precise it can split a second into 1000 parts. The Champion-sparked Austin-Healey maintained an average speed of 138.75 mph for 12 solid hours. It went 1000 miles at an average speed of 138.55 mph. In so doing, it set a total of 15 new World's Records!

CHAMPION SPARK PLUG

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Champion spark plugs to...

Bonneville Salt Flats

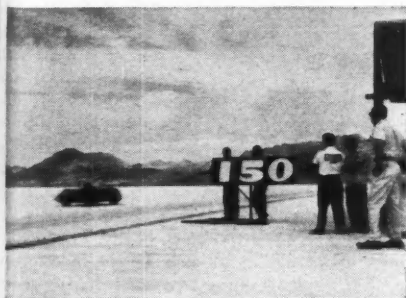
Following a 10-mile circle, a 4-cylinder sports car speeds 1656 miles in just 12 hours—averaging 138.75 mph. A world record performance—with Champion spark plugs!



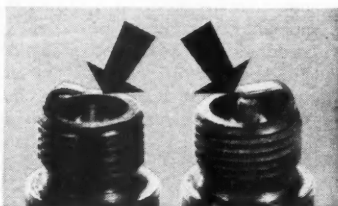
Austin-Healey team was headed by Capt. G.E.T. Eyston, one of the world's foremost experts on automotive speed. Capt. Eyston three times set a World's Unlimited Land Speed Record at the Bonneville Salt Flats. In 1938 he drove a car 357.5 mph, to set a World's Record that stood for 11 years.



Three drivers made the record run, changing places every 3½ hours. Their greatest difficulty was staying alert and on course, because the flat, featureless terrain gives a driver little sense of speed or direction. The record-setting Sprite (above) had special aerodynamic body, super-charger, and full-firing Champion spark plugs.



Sign tells driver he has just completed 150th lap over the Salt Flats. Located on the western edge of Utah, the area is solid salt—a desert so deadly that neither insect nor weed exists there. Men come here only to race. It is the largest unobstructed flat area in the world.



Champion has a spark plug that's right for every engine—and every type of driving. That's one reason experts choose Champions. Another is Champion's Powerfire electrode with its greater resistance to wear under extreme conditions. Photo above shows difference between ordinary electrode (left) and Champion's Powerfire electrode after identical service in a laboratory engine.



World's favorite
spark plug on land,
sea and in the air



COMPANY • TOLEDO 1, OHIO

Detroit

NEWS AND VIEWS

by Bill Callahan
Detroit Editor

A COMPACT-COMPACT offering surprising roominess and good looks will make its debut sometime in late spring or early summer. The car will be sired by a new Detroit company but probably will be produced elsewhere. Currently, the newcomer is just past the clay model stage (see photo, opposite page).

Body will be fiberglass; molds for it have been completed, so output could start suddenly. It will be offered as a two- or three-passenger fixed hardtop with a jump seat in the back. There will also be a manually-operated retractable hardtop model (see diagram, opposite page).

The body is well proportioned, so that despite its smaller size (160-inch overall length, 48½-inch height, 68-inch width), it does not look tiny or cramped. Wheelbase will be 93 inches, tread 58; 12-inch wheels will be used. Total weight will be about 1700 pounds.

The hood will be hinged at the front and the decklid hinged at the rear to permit the stowing of the retractable hardtop. On the fixed top hardtop, trunk space will be 19 cubic feet.

From an owner's standpoint the builders have adopted a very favorable philosophy about parts. Except for the body and its mating special tubular frame, all other parts will be standard production items obtainable through jobber or exist-

ing factory outlets. The engine will be a four-cylinder 65-hp standard Continental. Gearbox will be standard Borg-Warner, with an optional Borg-Warner automatic transmission (same as used by Rambler). Driveshaft and rear end will be Dana, very much like Studebaker Lark's. Instruments will be stock Stewart-Warner and even tail lights will be available through jobbers.

The whole idea seems to have been well thought out, and the designers have done an excellent job of designing around

Hyper pack that lifted its horsepower to 148 (from a stock 101)—then AMC engineers took another look.

With these minor modifications the ohv would fit nicely: A slight revision in the radiator mounts enabled it to be moved slightly forward to make more room. A stronger, tubular-type cross-brace was substituted for the angular brace across the top of the radiator to help stabilize the front end. The battery was moved from the right front of the engine compartment to the left rear, and the exhaust system was modified slightly. The change gives the American 125 hp (up 35). All in all it is a neat job, and from the service standpoint a big improvement—particularly when a valve job is required.

The factory has announced the following suggested prices (including federal tax and handling charges) on this new Rambler American Custom series: 2-door sedan, \$2010; 4-door sedan, \$2059; 2-door station wagon, \$2235.

THOMPSON-RAMO-WOOLDRIDGE INC. of Cleveland, Ohio has developed a new-type fuel injection unit which it believes combines engineering efficiency with low cost. T-R-W has been working on this device since 1953, during which period it dropped the idea of a continuous-flow system and came up with a superior timed-injection system (see photo, opposite page).

At present the firm is planning to sell its devices direct to manufacturers rather than attempt to adapt it to specific cars. Since optimum results can be obtained by modifying the manifold, valve timing and other areas, T-R-W feels that the manufacturers are best able to do this. Price to the makers with an annual volume of 150,000 units would currently run around \$50 each, with the possibility of reducing this later to \$35—which is below the retail cost of some higher-priced carburetors.

PRICES ON THE COMET have been factory-suggested as follows (including federal tax and handling charges): 2-door sedan, \$1998; 4-door sedan, \$2053; 2-door station wagon, \$2310; 4-door wagon, \$2365. Cost of options and accessories include: automatic transmission, \$171.70; radio, \$58.80; heater \$74.30; deluxe trim package, \$58.40. Comets have been scheduled to go on sale at selected Mercury-Comet dealerships throughout the country on March 17.



Thin tread grooves—added to the rounded contour and low profile of the new Good-year ultra-high-speed tire—provided more gripping edges for faster laps at Daytona.

available stock parts so that all units blend in neatly. At this stage, of course, nobody can project a price but from the standpoint of appearance, roominess and probable performance, for our money it could give the Karmann-Ghia and Caravelle a rough time in the marketplace without conceding anything price-wise.

FOR SOME TIME American Motors engineers hedged a bit about dropping the ohv six-cylinder engine used in the Rambler Six lines into the shorter-wheelbase (100-inch) Rambler American. Some said it couldn't be done because of the higher silhouette of the overhead job as compared with the Rambler flat-head. But when Corvair offered an optional engine with 95 hp (against its stock 80 hp); and Falcon offered a special three two-barrel carb setup with hot cam and other goodies that boosted output from 90 to 128 hp; and Valiant offered a

SALES BOX SCORE

As the 11th-hour tally was taken in 1959 sales, the gaps were closing among the top-spot contenders. Based on new car registrations for the first 11 months of the year, Ford had crept to within 5000 units from 1st place Chevy. Plymouth, in 4th spot, was only 2400 cars behind Pontiac in 3rd. Here is the lineup:

Chevrolet	1,347,456
Ford	1,342,341
Pontiac	362,792
Plymouth	360,348
Oldsmobile	341,940
Rambler	331,939
Buick	230,933
Dodge	147,838
Mercury	144,416
Cadillac	128,802
Studebaker	121,330
Chrysler	58,754
DeSoto	40,094
Edsel	39,029
Lincoln	25,611
Imperial	16,914

Rumors

"Valiant is having trouble with its new alternator used in place of the regular generator."

FALSE—Valiant did have trouble in some cases with short-lived voltage regulator points. Improved regulators that provide longer point life are now available at dealerships for owners of early models who may have had trouble.

"Studebaker-Packard will discontinue its Hawk series."

FALSE—The 1960 Hawk series did not get into production until early in February due to steel shortages. However, improvements in the new models, such as larger V8 engine, dual exhausts as standard, four-barrel carbs optional and bigger clutch indicate Studebaker has no plans to drop the line.

"Superchargers may be offered again as standard equipment on some production passenger cars."

POSSIBLE—Thompson-Ramo-Wooldridge of Cleveland, Ohio has developed a turbo-charger that is driven by the exhaust gases from the engine and thus does not syphon off any horsepower as is the case in belt- or gear-driven superchargers. The new unit, weighing 20 lbs., is said to increase the horsepower of an engine by almost 30 per cent and improve fuel economy by five per cent. Some car makers are showing interest in it.

"Willys Aero, which was discontinued in 1955, will be revived now that compacts are winning wider favor."

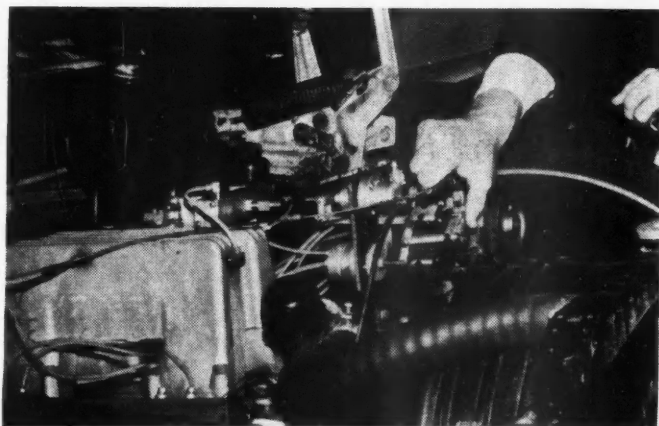
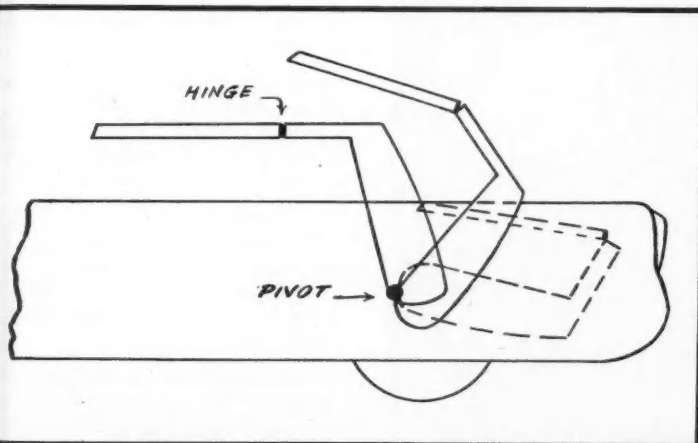
FALSE—This rumor pops up rather regularly with the current version probably resulting from the fact that the Aero will be produced in Brazil for the South American trade. There is no plan to import it.

"Detroit auto manufacturers are still thinking of a way to eliminate the spare tire—not so much to cut costs, but to increase usable luggage space without a complete retooling to alter present designs so the spare can be concealed."

TRUE — Firestone is currently testing their "Tempa" (temporary) spare, a small cross-section, thin-wall tubeless tire that, mounted and ready for use, is small enough to stow vertically in the seldom-used fender well sections of the rear trunk. Large enough in diameter to keep even the lowest stock car from dragging, it will safely carry the weight of the average passenger car for about 100 miles at a maximum speed of 50 mph.



Next addition to the Detroit compact clan could be this model, which may be introduced within the next few months (story on opposite page). This clay mock-up reveals the smaller size (93-in. wheelbase, 160-in. overall length, 48½-in. height). Other than body and frame, components will be available stock parts. Front engine will be four-cylinder, 65-hp. Sketch below shows how manually operated hard top stows in trunk space.



After experimental development during the past eight years, Thompson-Ramo-Wooldridge has announced a timed fuel injection system that it plans to make available direct to car manufacturers for a cost of \$35-\$50. A unit is shown installed on a '58 Chevy with stock F.I. manifold.

For Lots of Pots...or a Single 4-Barrel Carb

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Customized Air Cleaners

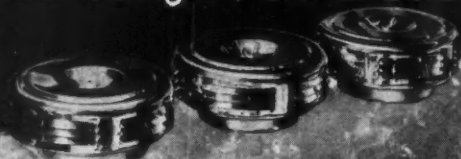
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ADDED POWER

EASY INSTALLATION



Sleek, Low-Slung and Chrome-Plated

Badger Air Cleaners for every carburetor system are available at your favorite Auto Store or Speed Shop. Look for the exclusive "cost-cutting" Badger design that assures maximum air flow even at low speed. Write direct for free literature.

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Combining business and pleasure



on a new, lightweight HARLEY-DAVIDSON Super 10*

Deliveries, messenger service, whatever it may be, the Super-10 turns work into play. And what makes it doubly exciting is that you quickly pay for the economical Super-10 with the money you earn while you're having fun.

Easy to ride, easy to handle... great for traffic... single-unit engine and transmission with plenty of GO! Up to 80 miles to the gallon... that's money in your pocket!

Comfort? It's the most! The Super-10 features a form-fitting, bucket saddle. Looks? Just your dish. Two-tone finish: Birch White tank panel with Hi-Fi Red, Hi-Fi Blue, Hi-Fi Green or Skyline Blue.

Specially treated to resist rust and corrosion.

Ask your Harley-Davidson dealer for a demonstration ride. He'll also fill you in on his low down payment and easy-pay plans. Or mail the coupon for a colorful, detailed folder.

*The Super-10 is also available in a 5-hp model to comply with various state laws.

HARLEY-DAVIDSON MOTOR CO.
Dept. MT, Milwaukee 1, Wisconsin

Please send me all the facts on the
Harley-Davidson Super-10

Name.....Age.....

Address.....

Driving Around

continued from page 12

it fairly certain that the majority of karts raced in this country will be home-built from do-it-yourself kits... There are several constructors..."

FROM FRANCE, Andre Costa, the editor of *L'Auto Journal*, is publicizing the sport in his weekly automotive paper and has initiated the Kart Club of France. No events have been staged there yet, but this spring should see a rash of them. Members of the Armed Forces who are interested should get in touch with the KCOF, 43 Blvd. Barbes, Paris 18e, France.

FROM GERMANY, Günther Molter tells us there is no apparent activity but that Formula Jr. is growing.

FROM ITALY, Johnny Lurani reports little activity, though one manufacturer has developed a 125cc kart.

FROM HOLLAND, the magazine *Auto Visie* reports that karting activity there is known as "skeltering," a name apparently picked up from an article MT once ran on karts, called "Helter Skelter."

FROM SWEDEN, Lars Johansson reports that karts were introduced there last summer, "... but people wanted to bathe and be lazy instead of building karts. It is possible the hobby will grow considerably in 1960."

FROM "DOWN UNDER," Steve Simpson tells us that "... karting creates frenzied conversation wherever a group of citizens gather to drink beer... Upwards of 20 companies build karts... Australia is truly going overboard for "karting." As for New Zealand, Simpson reports it "has been crazy for karting for the best part of 12 months."

FROM MEXICO, Emil Zubryn reports of no known kart activity, but is certain it will soon spread south of the border.

FROM ARGENTINA, Ronald Hansen and Gianni Rogliatti tell us, "There are no karts as such, but the local Buenos Aires motor club has scheduled an event in which there will be demonstrations by an American team. It should sprout then."

FROM JAPAN, Shotaru Kobayashi says, "Nothing yet, but I'm looking forward to it. Looks like much fun!"

And that it is. See you at the kart raceway!

Karl K...

If you can drive you can
win in a

SIMPLEX

Challenger Racer



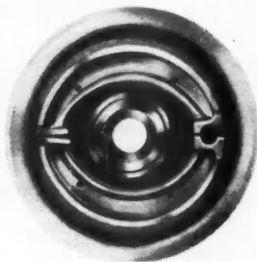
MARK I
Challenger Racer
Qualified for Class "A" Competition
\$189⁰⁰

HERE'S WHY ...

These superb racing Karts were designed by Bill Muller, former Indianapolis race driver and racing engineer, to provide (AS STANDARD EQUIPMENT) everything you need to win in top competition. These Challenger Racers offer 25 advantages, the combination of which is not found on any other Racing Kart in the world. Two of these advantages, brakes and steering mechanism, are exclusive with the Challengers and are considered by leading racing engineers to be the ultimate in Kart braking and control. Challenger Racers come equipped with a choice of Clinton or Lauson engines but are available with other leading make engines or without engines if you choose.

HERE'S WHY ...

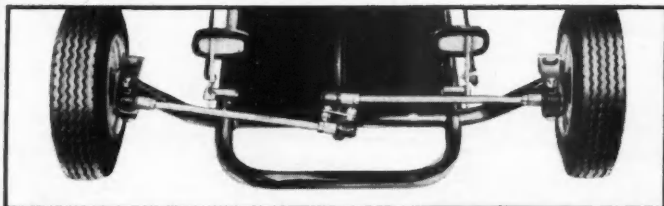
The Challenger brakes are two-shoe automotive internal expanding brakes. Their braking efficiency at racing speeds is proving to be one of the big plus factors in winning races. They permit the driver when approaching a curve to maintain top speed longer than Karts with other type systems which must start to brake much sooner.



HERE'S WHY ...

The absolute perfection of the Challenger Racers *Steering mechanism cannot be improved. It represents the ultimate in Racing Kart steering and provides a precise turning radius which completely eliminates tire scrubbing and frictional speed losses on curves.

*Patent applied for.



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	MARK I SINGLE ENGINE	MARK II DUAL ENGINE
SIMPLEX CHALLENGER		
Standard Retail Price	\$189.00	\$269.00

INCLUDES:

Completely assembled ready to race	Yes
Crated	Yes
Freight Paid	Yes
Chassis completely welded	Yes
Painted—Baked enamel. Black or Red	Yes

TYPE BRAKES:

Finest automotive two shoe	
Internal expanding brakes	Yes
Internal Band Brakes	No
External Spot Brakes	No
Scrub on tire brakes	No

STEERING:

Diameter-king pin	1/2"
Air craft type fittings	Yes
Shake proof fasteners	Yes
Precise turning radii	Yes

ENGINE: Choice of

Clinton 2 cycle 2 1/2 H.P.	Yes
Lawson 4 cycle 2 1/2 H.P.	Yes

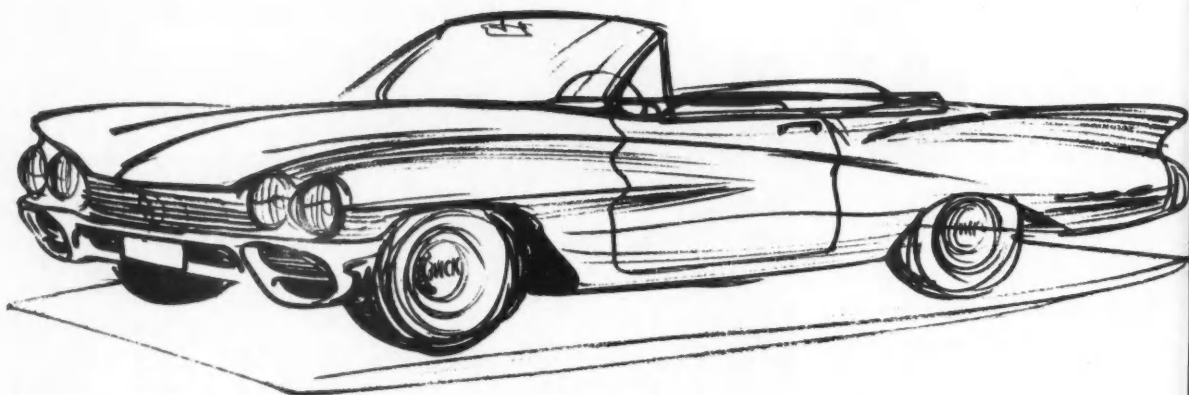
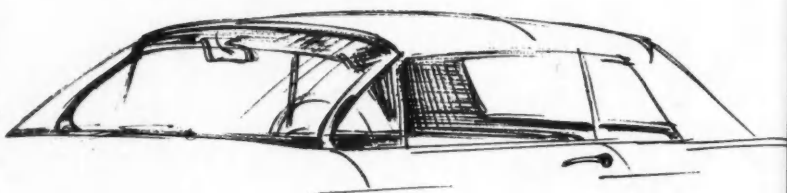
OTHER FEATURES:

Wheel size	5"
Tapered roller bearings	Yes
Fully pneumatic tires	Yes
Hub caps (keep out dirt)	Yes
Foot brake pedal	Yes
Foot accelerator pedal	Yes
Replaceable axles	Yes
Dry air filter	Yes
Rewind starter	Yes
All chain drive	Yes
Front bumper	Yes
Automatic clutch	Yes
Seat side rails	Yes
Full length floor pan	Yes
Seat and back cushions are	
the only extra on these cars. Cost \$9.85	

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plan in the industry and
DEALER INQUIRIES ARE INVITED

What's Next?

After its "smaller" sedan (bottom of page), Buick may soon follow with a convertible—a body style personally preferred (and supported) by many Buick stylists. Design would follow the current fashion of slanted front fenders, sculpted metal sides and rear fenders.



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BABY for BUICK and N

SHARING the basic Corvair body, both the Buick and Olds small cars will disguise it with individual styling, longer rooflines, more luxurious appointments, and lengthier wheelbases. Doors will remain the same, but the rear glass comes farther forward. Both models (to be introduced early in '61) will be longer than the Corvair but much more compact than their own current standard models.

The B-O cars will share a common engine to be built at Buick on a line now being installed. As previously

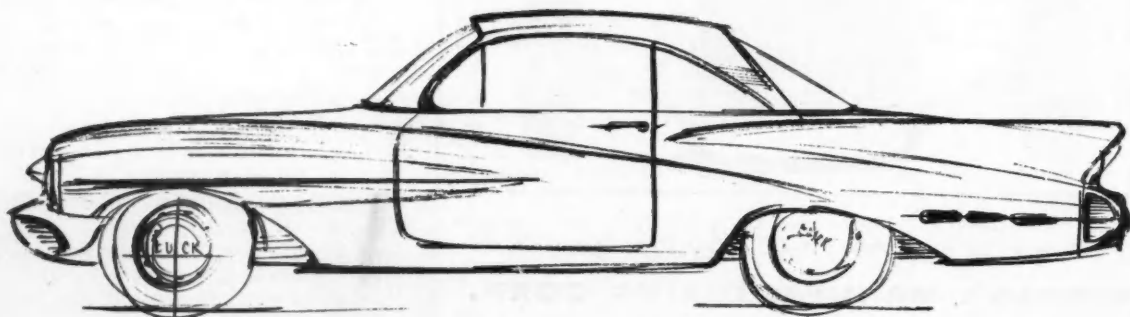
reported, it will be a shortened V8, with aluminum block and head and cast-iron sleeves, developing over 150 hp from 215 cubic inches.

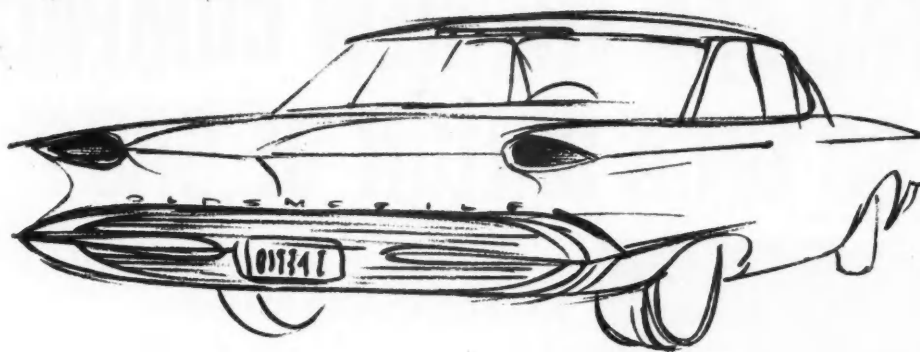
Engine will be front-mounted, with transmission and solid rear axle as a unit in the rear—following Corvair's flat floor design.

As with Buick, the Olds small car will share the basic Corvair body, but with individual styling and plusher interiors. The sedan rear end will bear a strong family resemblance. Roof of the wagon (opposite page) is an extension of the four-door

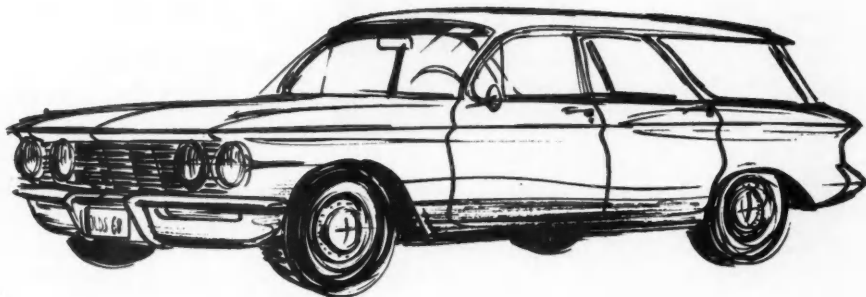
sedan's. The wagon grille shown is one of several being considered; there is rumored to be a strong debate over front-end treatment between the advocates of traditional Olds styling and others favoring somewhat of a departure. A final decision may not be made until the last minute.

In addition to the probable convertible and station wagon models forecast on these pages, a long list of power and accessory options will be offered. Gearbox cars will most likely have floor shifts.

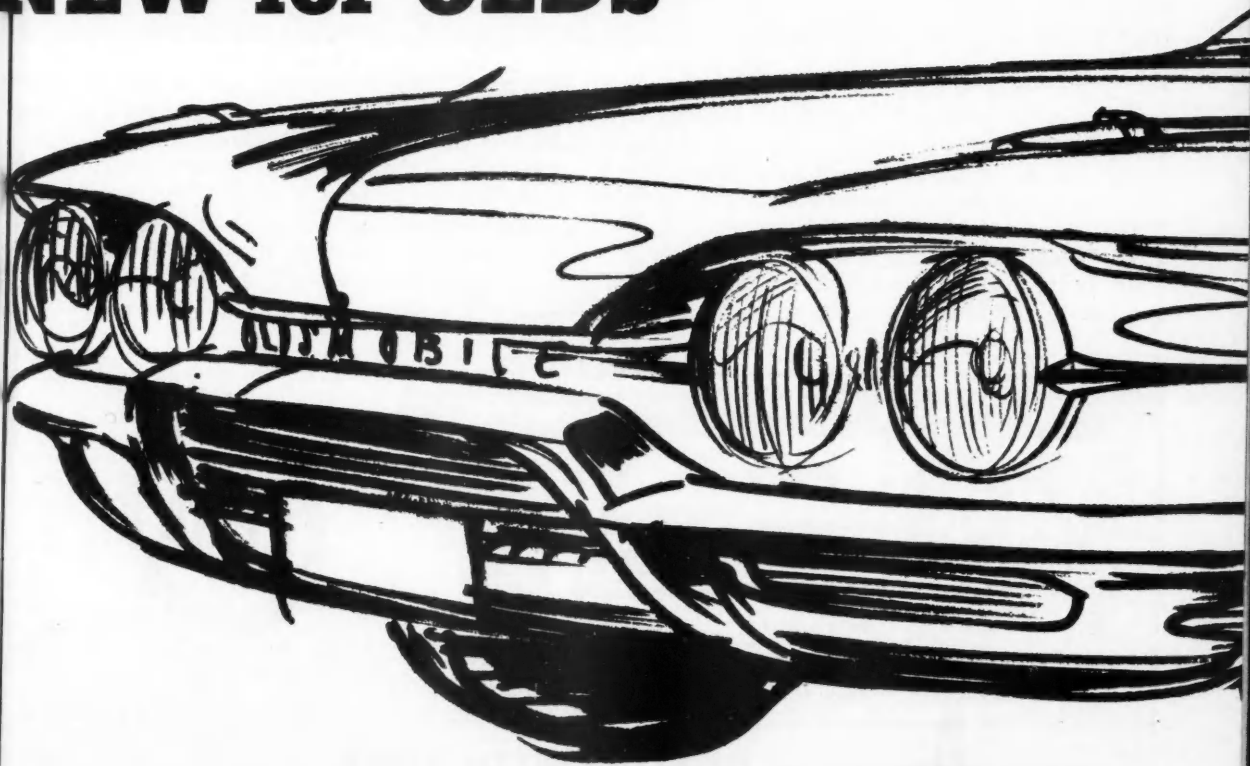




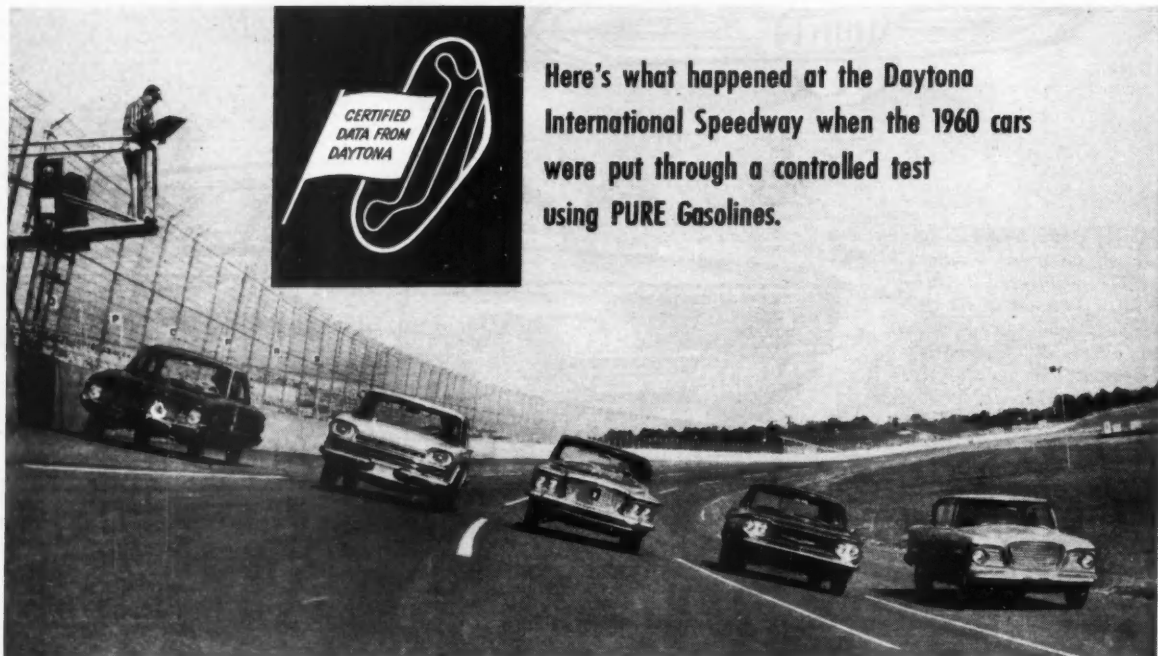
Like the Buick, the Olds small car will be styled to show a family resemblance but will not be just a cut-down model. Overall length will not exceed 200 ins.; weight will be about 1000 lbs. under the standard cars. Possible front ends (at right and below) are being debated.



NEW for OLDS



HOW FAR CAN THE NEW COMPACT CARS GO ON A GALLON OF GAS?



Here's what happened at the Daytona International Speedway when the 1960 cars were put through a controlled test using PURE Gasolines.

One of the most important events of the NASCAR Safety and Performance Trials is the running of the Pure Oil Economy Trials. Interest was high for all classes (grouped according to piston displacement), but the question most often heard was, "What do you think the compact cars will do?"

The results are official now and the answer is plain: In the hands of a careful driver, with quality gasoline in the tank, the new compact cars can

deliver the kind of mileage you've always been hoping for, and then some. The average of all five compact cars was a thrifty 38 mpg.

Whether you drive a big car or a compact one, if you want top economy, doesn't it make good sense to use the gasolines that set the records for economy at Daytona? Next time, try a tankful of PURE-super-PREMIUM or PURE-PEP, the "economy regular."

Results of the Pure Oil Economy Trials

	PISTON DISPL.	WINNING CAR	DRIVER	MILES/GAL.
CLASS 2	(131 to 200 cu. in.)	Rambler American	H. F. Thomas	51.281
CLASS 3	(201 to 250 cu. in.)	Ford Fairlane (6 cyl.)	Bill Stroppe	34.951
CLASS 4	(251 to 304 cu. in.)	Chevrolet Biscayne	Betty Skelton	29.423
CLASS 5	(305 to 361 cu. in.)	Chevrolet Belair	Ralph Johnson	21.452
CLASS 6	(362 to 389 cu. in.)	Pontiac Catalina	Bob Pemberton	22.784
CLASS 7	(390 cu. in. & over)	Chrysler Crown Imperial	Danny Eames	21.325



If you care for your car **BE SURE WITH PURE**

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event is
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Glove COMPARTMENT

400 INSURANCE COMPANIES now offer 10 per cent discount on premiums for owners of U.S. and imported compact cars in 43 states. Discount is in addition to the 10 per cent reduction for driver education under age 25, and to the 25 per cent credit for two-or-more-car families.

500-MPH-PLUS is the goal sought by Dr. Nathan Ostich of Los Angeles, who plans a run to break the land speed record this August at Bonneville. Powered by a B-36 bomber turbojet engine, his 28-ft.-long streamliner will have aluminum wheels and 48-inch nylon tires especially designed by Firestone. *Hot Rod* magazine Tech Editor Ray Brock is project technical adviser.

THE D-A LUBRICANT Achievement Trophy has been placed in the Indianapolis Motor Speedway Museum. Created in 1959, the award honors "the chief mechanic who demonstrates the greatest skill, imagination and perseverance in preparing a car for the Indianapolis 500-mile race." Last year's winner was Jean Marcenac, chief mechanic of the supercharged Novi cars.

RUNNING PROGRESS REPORTS of the 12-hour Sebring Grand Prix on Saturday, Mar. 26, will be presented by Amoco over the CBS Radio Network. Starting with the race kickoff, the brief summaries will be broadcast periodically during the event. Check your local CBS Radio outlet for exact broadcast times.

FOURTH INTERNATIONAL AUTO SHOW opens Apr. 16th in New York City Coliseum for nine days. All new domestic and imported cars will be on display, plus a number of "first showings," dream models, do-it-yourself cars, and a broad exhibit of parts and accessories. Attendance is expected to exceed last year's 250,000.

CUSTOM CAR FANS should circle these show dates on their calendars: Mar. 10-13—Autoworld, Fairgrounds, Fresno, Calif.; Mar. 18-23—Autoworld, Balboa Park, San Diego, Calif.; Mar. 18-27—Rod, Custom and Antique Show, Brooks Hall, San Francisco; Mar. 25-27—Autoworld, Ohio State Fairgrounds, Columbus, Ohio; Apr. 8-10—Rod and Custom Auto Show, Pima County Fairgrounds, Tucson, Ariz.; Apr. 15-17—Rod and Custom Auto Show, Arizona State Fairgrounds, Phoenix, Ariz.

INTERNATIONAL SPORTSCAR RACES, Apr. 2-3 at Riverside International Motor Raceway, should draw a full field of U.S. and European drivers. The 200-mile pro-amateur race is for a \$20,000 guaranteed purse. The FIA- and USAC-sanctioned event is sponsored by the Los Angeles *Herald-Express* and the *Examiner*.

—Erv Rosen

For miles of smiles...

GLIDE CONTROL^{*}

stops tiring, gas-wasting "PEDAL PALPITATION"

Send coupon now for data on how any driver... any car... can now get greater gas saving and driving ease than ever before!

NOW, GLIDE CONTROL lets you achieve automatically with any car, exactly what professional "economy run" drivers are famous for—record-breaking fuel savings through precise, even throttle control and fuel-feed.

GLIDE CONTROL is a perfected, precision-made electronic instrument, proven efficient and fool-proof in rigid performance tests by leading engineers. It increases gas mileage up to 25%—pays you back its full cost within a few months!

SAFE TOE-TIP CONTROL

Driving with GLIDE CONTROL is as simple as dimming your headlights. You accelerate to any desired speed, then "cut in" GLIDE CONTROL with your left toe. Once speed is set, your right foot is free, relaxed. No "throttle-foot" fatigue! You can increase acceleration with your foot to pass a car



WASTEFUL PEDAL "PALPITATION"—Hundreds of thousands of rpm, gallon upon gallon of gas, wasted every day! Figure it out for yourself—engineers estimate waste by multiplying this way: number of miles driven × number of "palpitations" per mile × useless rpm per "palpitation"

and then pre-set speed resumes. GLIDE CONTROL "cuts out" the instant your toe touches the floor button again or you apply your brakes.

ELIMINATES FREEZING WEATHER ENGINE STARTS

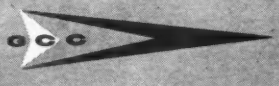
On cold winter mornings set your GLIDE CONTROL to warm your engine while you have your second cup of coffee. Warm engine means longer life—less repair. GLIDE CONTROL pays for itself in a few months in gas savings alone. Available at your automobile dealer, garage, or service station.

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The McCulloch Cart Engine MC-10, 5.3 cu. in., 10 lbs. Loop scavenged, 12 to 15,000 RPM. Bearings thruout... \$125.00. Immediate delivery.



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Heavy duty for fast cornering cartmen.
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Precision bent, drilled and notched. Drop center side rails and front axle. Two hoops—rear axle. 6 pcs. Spec. \$9.75



☐ 5" COMPETITION WHEELS

Complete, sealed N.D. precision bearings, tires & tubes. Webbed aluminum hubs—4 1/2 x 3" bore. Two 3.40/3.00 x 5 front, two 4.10/3.50 x 5 rear. One rear wheel 1/2 aluminum 1/2 steel 4 1/2" offset hub for simple sprocket mounting. Complete set of 4—Regular \$58.00, Spec. \$42.00

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CAR OF THE YEAR

MT presents its 1960 annual Progress Award
"for most significant engineering advancement"



WITH INTEREST IN COMPACT CARS being what it is, it was virtually a foregone conclusion that members of our staff would vote for a compact as the "Car of the Year" in this—our fifth annual MOTOR TREND Award. We weren't looking for the fastest, or the most economical, or the most lavish, or the best styled, but strictly for "the most significant."

The basic premise on which the award is based was set forth in our May, 1956 issue. We said that the award was to be made to a production car, that we were to disregard changes made strictly for the sake of change alone, that we were to weigh the meaning of any new program or philosophy and that we were to disregard changes that bring the car "up to par." In short, it was to be presented annually "... to the U.S. manufacturer making the most significant engineering advancement."

The choice of the 1960 Chevrolet Corvair was unanimous. Why? For engineering advancement: its aircooled engine, trans-axle and four-wheel independent suspension. All these combined spell progress and compel us to select the Corvair as the most significant car of 1960.

PREVIOUS AWARD WINNERS

- '59 **PONTIAC**
"With its wider track and year's best combination of handling, ride and performance."
- '58 **FORD THUNDERBIRD**
"The overall concept of the '58 Thunderbird—a car that combines safety with performance, and comfort with compactness."
- '57 **CHRYSLER CORP.**
"Superior handling and roadability qualities in their Plymouth, Dodge, DeSoto, Chrysler and Imperial."
- '56 **FORD MOTOR CO.**
"Its contribution to automotive safety by providing the interior safety package on Ford, Mercury, Lincoln and Continental cars."





CORVAIR

"Aircooled Engine"

THE DECISION TO USE an aircooled engine goes back several steps. During the design stage, it was decided that the engine would be placed in the rear in conjunction with the transmission. This made minimum weight an immediate requirement. The extensive use of aluminum became the logical way to achieve low weight. And with this came the additional advantages possible with an aircooled engine.

First, though, after the engineers had established their design, new sources of continuing supply had to be set up. Management worked out an agreement with Reynolds Metals, then Chevrolet built a new plant adjacent to the Reynolds plant at Messina, N.Y. Now aluminum is delivered on a 24-hour basis in molten form ready to pour into molds. This cooperative venture (with the two plants being next door to each other) eliminates the third—and costly—step of remelting the aluminum.

The aluminum, aircooled engine is not dependent on the

properties of a liquid coolant (water or other) to transfer rejected engine heat to a radiator and then in turn to the airstream. The efficiency of the cooling system in a liquid-cooled engine is limited by the temperature differential between the coolant and the engine (boiling point of water, 212°F and ambient air temp., 70-100°). The aircooled engine, on the other hand, does not have this restriction. Since the air passes over the fins cast into the cylinders, as the engine becomes warmer, the cooling system becomes more effective; since the cooling is not limited by the boiling point of water, the increased level of cooling effectiveness goes quite high.

Other advantages: no intermediate coolant, no water pump, no radiator, more uniform cooling (through variation in size of fins and in the use of the shroud to direct air where it's most needed) and faster warm-up (through elimination of water and extra metal masses).

CAR OF THE YEAR

continued

WHEN LAST YEAR'S MY AWARD was made to Pontiac, we said the thing that "... particularly intrigues us—beyond the change for the better with the wider tread—is the

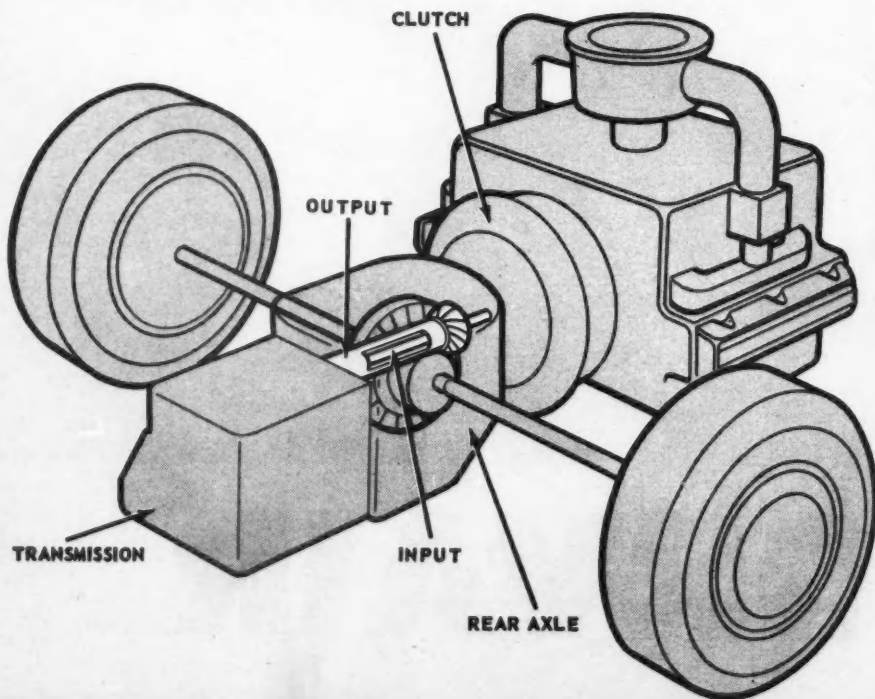
possibility that this change presages an even more important one: the trans-axle (transmission located at the rear in combination with a swing axle)." Well, Pontiac for '60

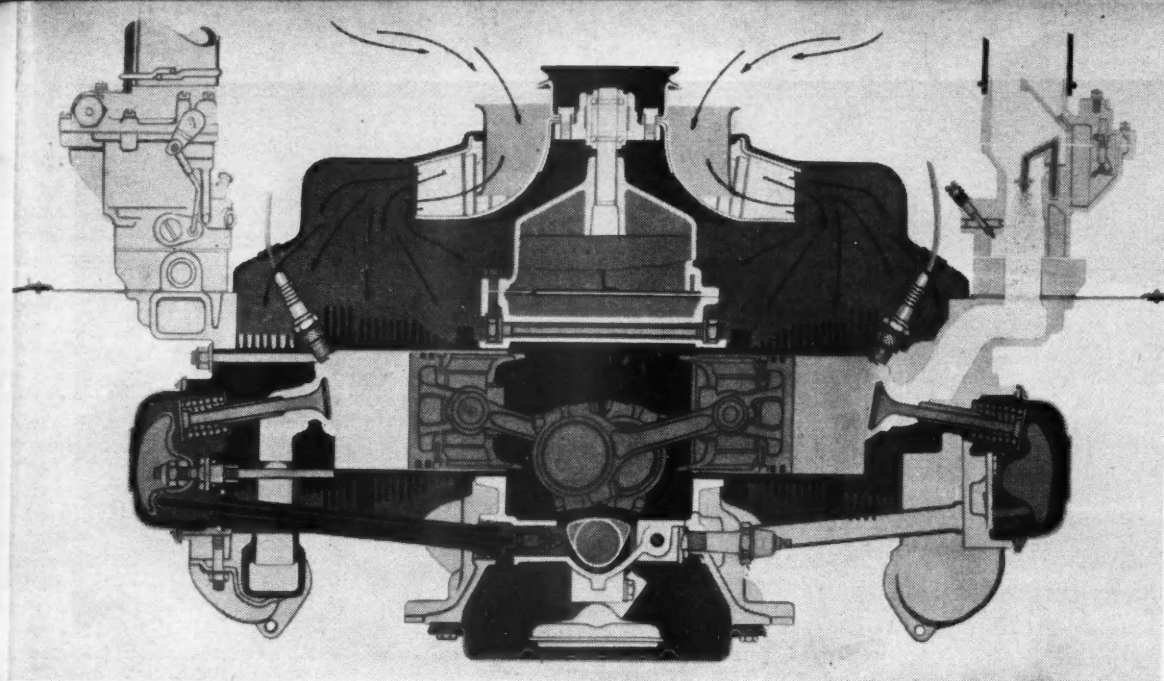
didn't do it (though we still think they will), but Chevrolet with their Corvair did.

The main advantages of a trans-axle arrangement are: it eliminates the driveline hump (allowing a flatter floor and lower roofline); the trans-axle becomes a part of the "sprung mass" (adding to the ride qualities); in this location the transmission case can use less material and with the extensive use of aluminum is made much lighter; and, engine heat is effectively isolated from the passenger compartment.

The diagram at left explains the basic principle of a trans-axle: Power from the engine is transmitted through the input shaft (in the hollow center of the main shaft) to the transmission, then by the mainshaft and drive pinion (rigidly splined together) through the differential side gears to the rear axle shafts.

"Trans-axle"



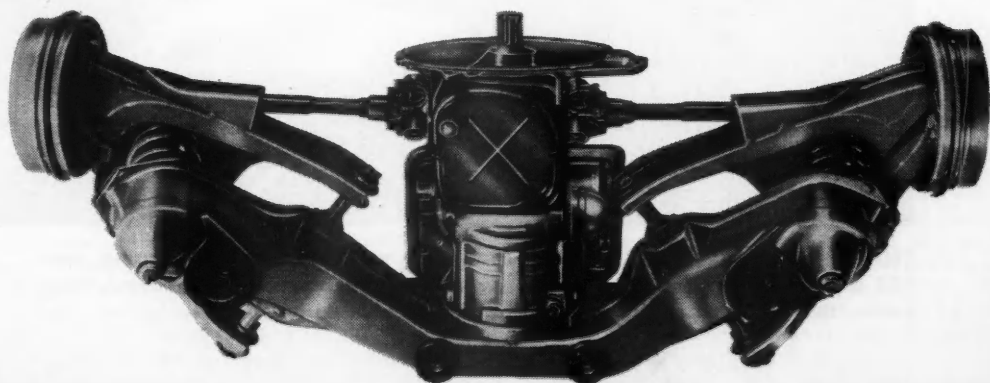


"Four-Wheel Independent Suspension"



the front wheels. The rear suspension is similar; in that the crossmember supports all the suspension elements to help reduce harshness and noise.

The swing axles (two shafts instead of one) actually swing through arcs of a radius equal to the shaft length. In this way, there is independent action of each wheel, reducing wheel hop and contributing to the ride. The combination of understeer built into both front and rear suspensions, the low-profile tires, wide rims and use of proper tire pressures make the Corvair a good handler.



TOTALLY UNLIKE any other U.S.-built car with front independent suspension only, the Corvair was designed with rear independent suspension too. Of course, this was partially dictated by the placement of the engine in the rear, but the advantages of a swing axle arrangement were taken into account when the total package was being conceived. Combined with the independent front suspension, Chevrolet engineers arrived at a car that had a low center of gravity, good roll stability and a reduced unsprung weight—all of which contribute greatly to good handling and ride characteristics.

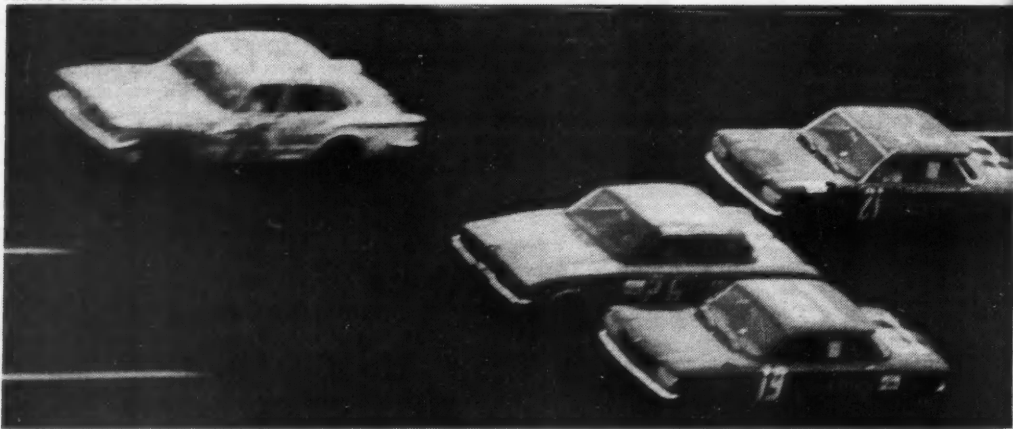
On the Corvair the front suspension is completely unitized in one complete sub-assembly; with this system the only forces transmitted are those applied at



daYtona dEmons

THE 88.154-MPH VALIANTS No question at all that the Valiants (above) were the go-go-go cars of the compacts. Over the 3.8-mile speedway-and-infield course they averaged 88.154 mph, taking the first seven places.

PHOTOS BY BOB D'OLIVO



THE 122.282-MPH VALIANTS These cars really howled. Averaging over 122 mph for 20 laps and 50 miles over the 2.5-mile speedway course, they swept the first three places, passing the competition with ease.

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BIGGEST TOPICS OF DISCUSSION in Daytona among the fans, drivers, dealers and press were the go-go-go Valiants and the super-hot Pontiacs. They were the real Daytona demons, sweeping practically every race.

Sent to the dealers with the factory-modified, 148-horse engines, the Valiants were de-gutted as much as possible to lighten weight and still stay within the rules, had beefier suspension units and special brakes. On both the 2½-mile oval and the 3.8-mile road course-and-oval, the Valiants romped on the competition. In the first 10-lap run, they swept the first seven places at an average 88.154 mph. In the second 10-lapper over the oval only, Valiants were 1-2-3, averaging 122.282 mph.

The story behind how the Valiants were able to so completely outclass the other compacts is in the hopping up of the 170-cu.-in. engine—from a somewhat modest 101 hp to a publicized 148 and an estimated 170-180. It's also in suspension and brake modifications—some of which are shown on the following pages (along with those on the competing Falcons and Corvairs).

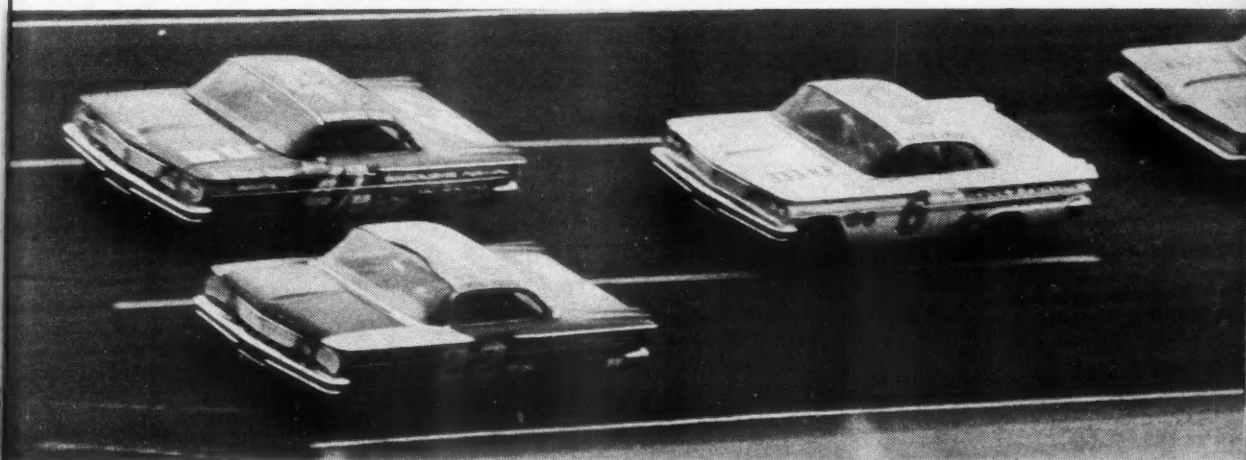
As for the Pontiacs, they didn't dominate in number, but that's about the only department they didn't: they qualified faster, lapped faster during races and won more up-front positions than any other make. In the first and second qualify-

lapped at better than 150 mph! "If Pistone had tried to pass, hitting the wake of wind would have been like hitting a brick wall," a driver told us later.

This unintentional drafting aid to Pistone was later used purposely by Smith to aid Bobby Johns in the Smokey Yunick-prepared '59 Pontiac. Johns had never been far out of contention and in the late stages had only a few seconds lead over Johnson. Smith's Pontiac was far out of the running, so a radio call went out to him to "break wind" for "cousin Pontiac." The Boomershine entry from Atlanta was undoubtedly the fastest car on the track and Smith set out to prove it, lapping several times above 152 and once cranking it on for a fantastic 154.45 mph! But though this increased his lead, Johns spun out on the backstretch with but nine laps to go. "My back window popped out and the next thing I knew I was looping onto the grass." He made a complete circle and got back onto the track—but was now 25 seconds behind Johnson.

And that's the way it ended: Johnson ('59 Chevy) first, Johns ('59 Pontiac) second. Third and fourth were the son-and-father team of Dick and Lee Petty in '60 Plymouths. Fifth, ninth and 10th were '60 Chevies. Sixth, seventh and eighth went to '60 Fords.

The great number of crashes (20) during the race, includ-



THE 150-MPH PONTIACS Pontiacs virtually monopolized the qualifying events and the prelims, running bumper-to-bumper and turning the fastest averages ever in a stock car race. Highest one-lapper was 154.45 mph!

ing races they took 1-2-3-4 and 1-2, with winners Cotton Owens and Jack Smith averaging 149.89 and 148.16 mph. In the two 100-miler preludes, Pontiacs were both 1-2, with winners Fireball Roberts averaging 137.61 and Smith 146.52.

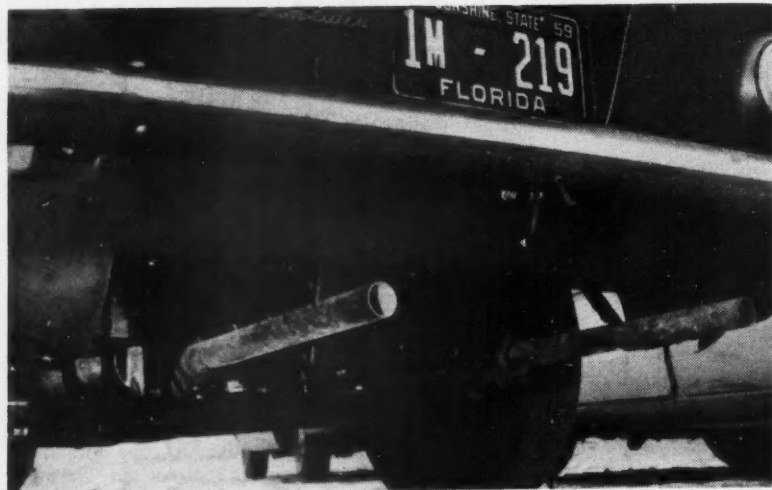
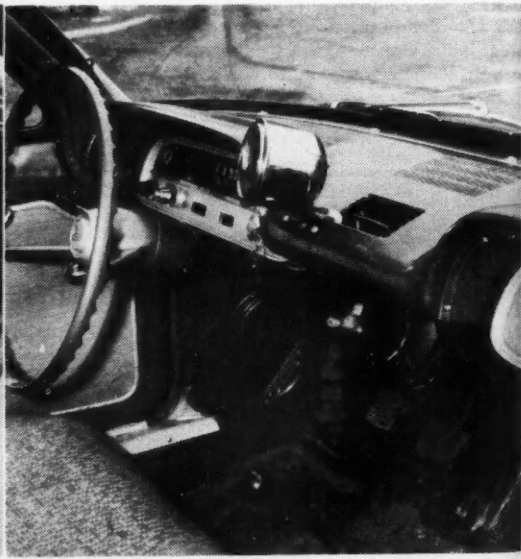
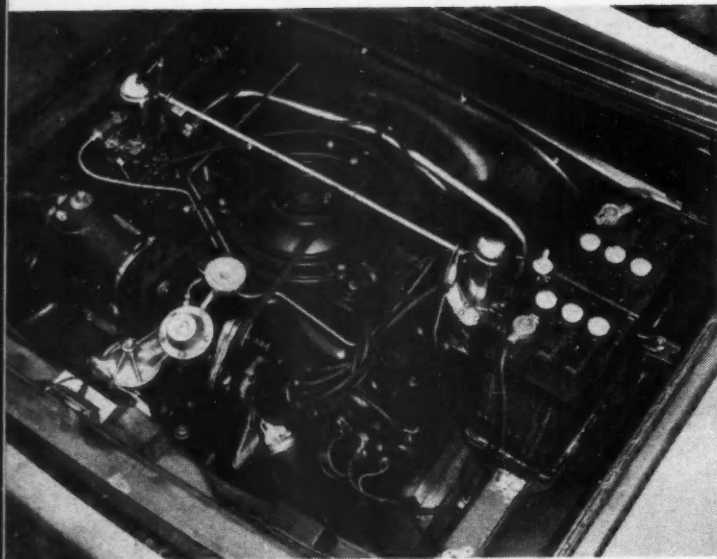
In the 500-miler, it was another story. Though four Pontiacs jumped into the lead and stayed within scant seconds of each other for the first 50 miles, Junior Johnson, the eventual winner in a '59 Chevy, began to challenge early for the lead. When Roberts' Pontiac dropped out with ignition trouble, Smith's Pontiac moved up, sharing the lead with Johnson first, then later with Tom Pistone ('60 Chevy). Pistone practically hooked onto Smith's bumper, taking advantage of the draft, upping his speed so that the two of them consistently

ing a fantastic one in which a T-Bird tore out 50 feet of guard rail and then literally exploded, kept the average speed down to a relatively slow 124.74 mph. Yet, when the lead cars ran under the green flag, they were ticking off 148-152 mph each time around. These speeds and the crashes seem to be associated. The air turbulence set up by anywhere up to 66 cars rushing around forces the drivers to be constantly on the alert. Side-thrusts buffet their cars and can throw them into wild skids—either into another car or off the track. It takes an experienced—and fresh—driver to cope with this. If the speeds go much higher, you can look for the "Daytona Demons" to be something besides our title for a story about a couple of cars that ran there.

CORVAIR and FALCON



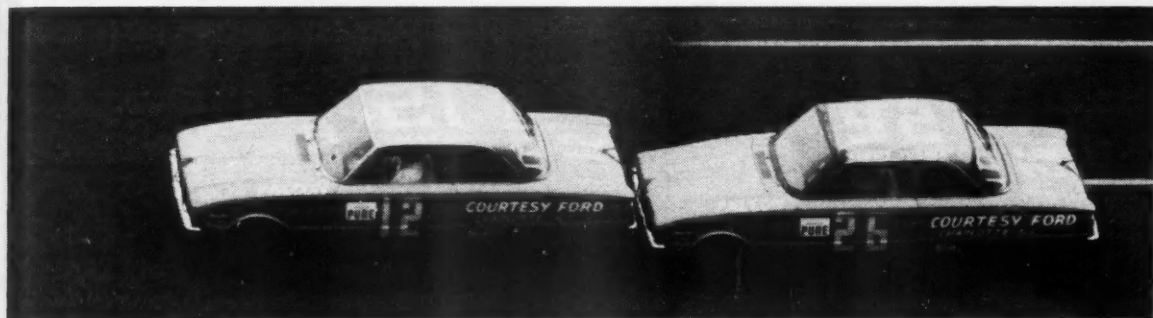
CORVAIR LESSONS WERE STILL TO BE LEARNED WITH OPPOSED ENGINE IN REAR, INDEPENDENT REAR SUSPENSION, AND SHORTAGE OF TIME.



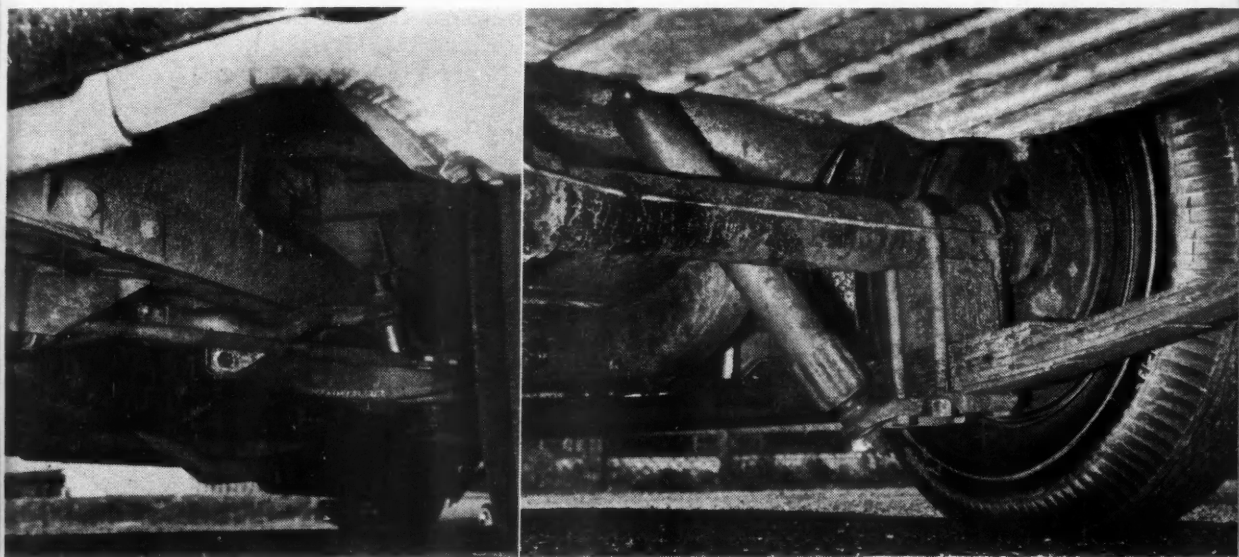
Duntov did not have much to say. He did seem a bit disappointed in Corvair performance, compared to Valiants. The only modification to the engine was the factory kit (cam and heavier valve springs). Duntov said the reason was time—there was not enough of it to build a four-carb setup for this race. He did say that this is what the engine needs. Corvairs (like the others) used stock steering, and the slow ratio seemed to work out well with the cornering attitude of the car. Too much front-wheel movement seemed unnecessary. Suspension was altered with heavier springs and shocks both front and rear, and a meaty stabilizer bar across the front. Naturally, all cars were stripped to save weight, had tachometers installed. Corvairs looked good on the road course, especially Jim Reed's, Fireball Roberts' and Pedro Rodriguez's.

Courtesy: Wetheroff off the day. The Daytona factory spe kit con and rea bilizer The eng manifold gressive (bringin heavy ve a high-l car had revved t a higher Both ca wild en Bill Str

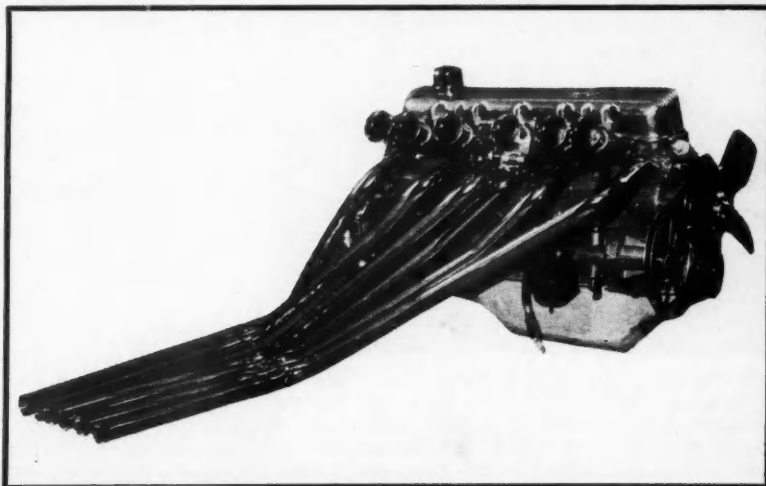
... as raced at Daytona

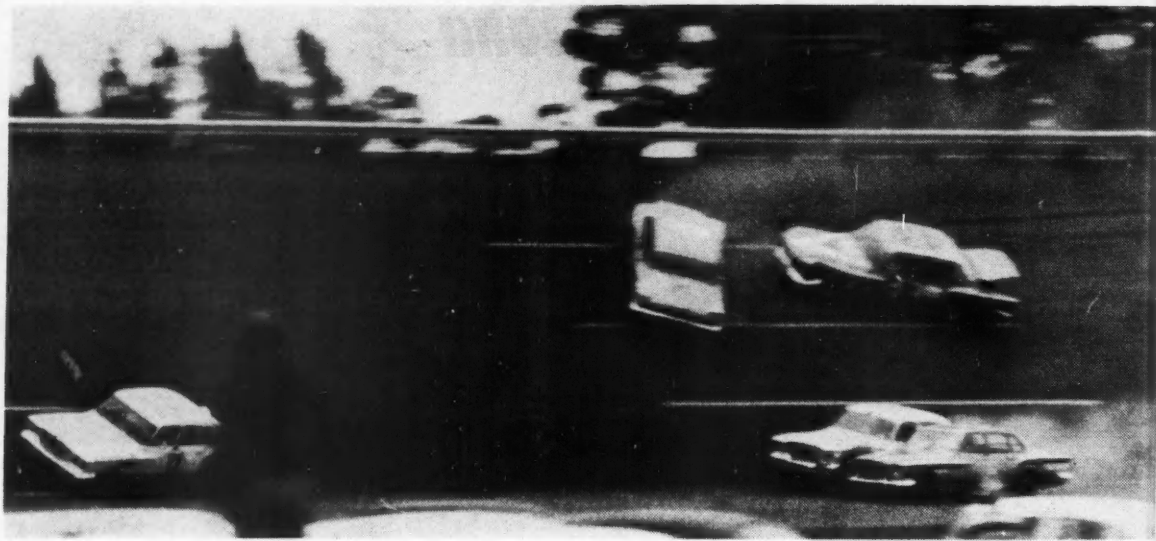


FALCON, DESIGNED FOR ECONOMY, GAVE RACE CREW PROBLEMS. BUMPER TAG ON BANKING ADDED 500 RPM, WAS MOSTLY FOR SHOW.



Courtesy Ford in Charlotte pulled Joe Wetherly's #12 and Curtis Turner's #26 off the showroom floor 11 A.M. Wednesday. They were prepared, and arrived at Daytona ready to race 3 P.M. Friday! Factory speed kits were installed. The chassis kit consisted of stiffer springs front and rear, heavy shocks, extra-heavy stabilizer bar on the front (see photos). The engine kit consisted of a three-carb manifold with two-throat Holleys and progressive linkage, .080-in. off the head (bringing compression ratio to 9.4:1), heavy valve springs and solid lifters, and a high-lift long-duration cam. Wetherly's car had a station wagon rear end (3.89), revved to 6600 rpm. Turner's car pulled a higher gear (3.56), turned to 6300 rpm. Both cars used skins by Firestone. The wild engine (right) was prepared by Bill Stroppe, but was never installed.

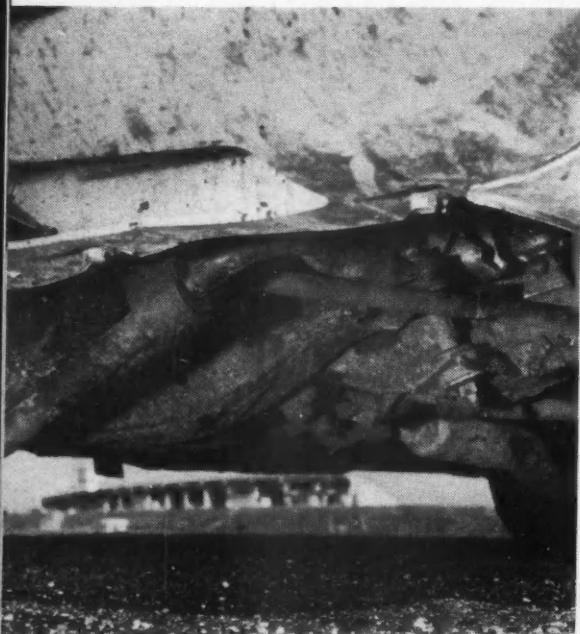




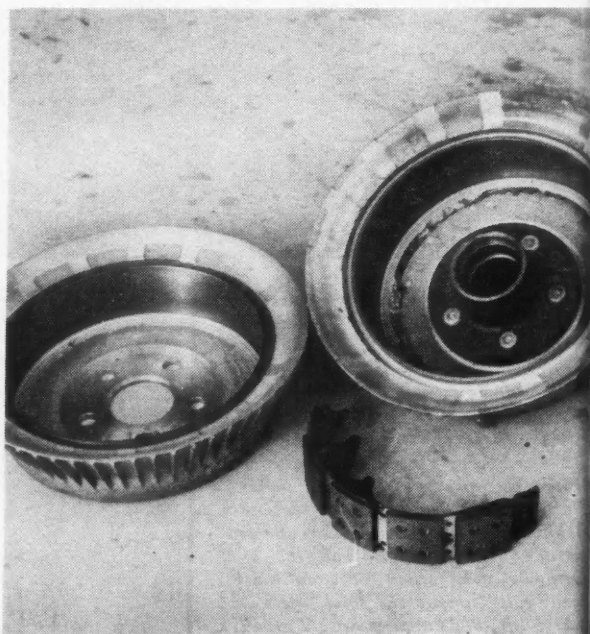
PAUL O'SHEA (#9) WAS NUGGED, HIT DICK PETTY (#43), WHO HIT WALL. CRISS-CROSSING CARS WERE HIT BY OTHERS IN CHAIN REACTION

VALIANT

Learning from previous competition, Valiants open bag of tricks for "field day" at Daytona

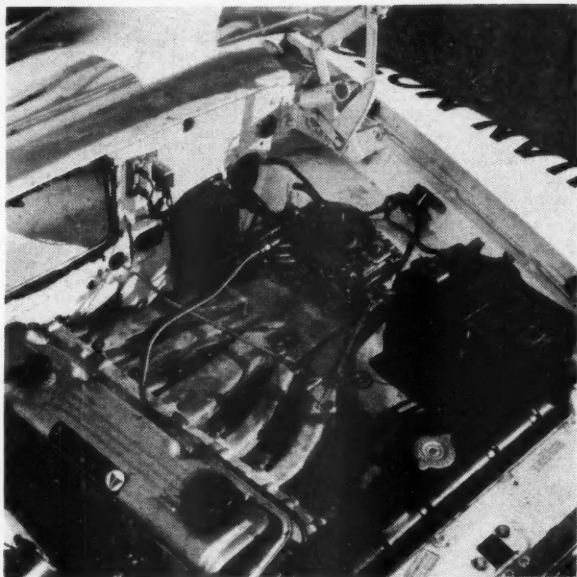


Car #8, driven by Marvin Panch, used a specially constructed stabilizer bar. Cars #16 and #17 used the standard sway bar for the Chrysler 300 series. A sturdy piece of work indeed, certainly adequate to give lots of roll stiffness to the front end. Torsion bar rates and rear springs were stock, with some drivers preferring soft or hard shocks for either course.



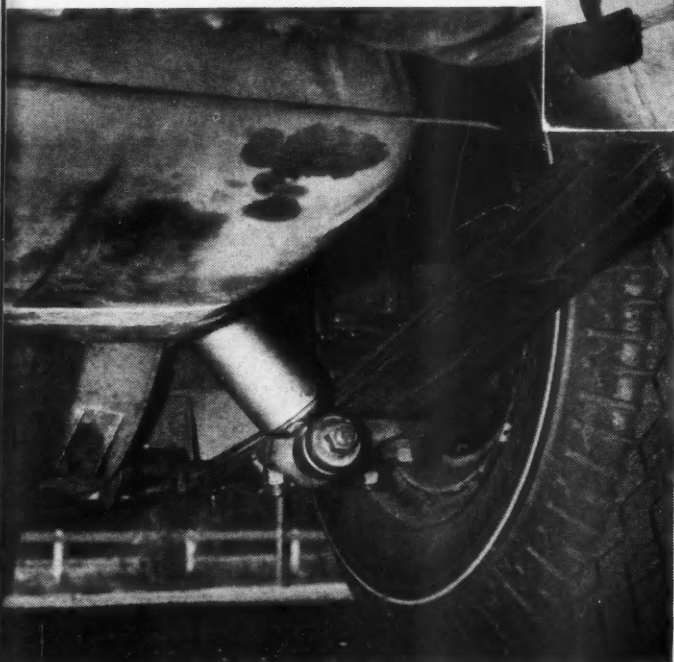
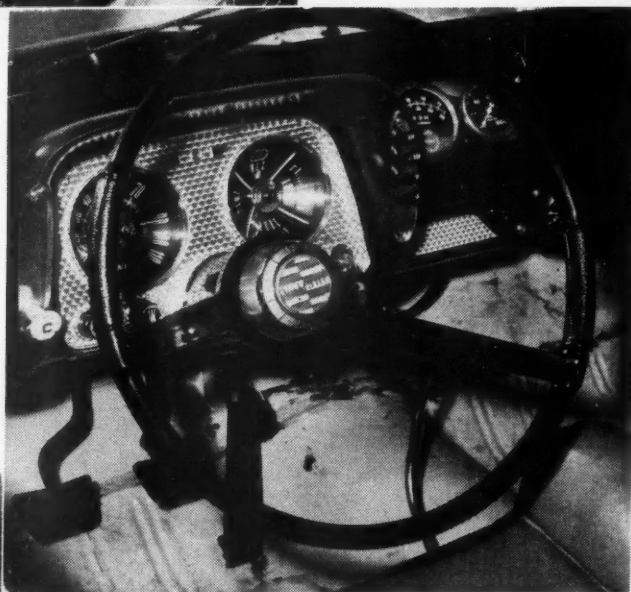
Well-finned aluminum drums were used front and rear, with Bendix cerametallic segmented linings. Effective lining area was the same as stock, but wheel spindles were big and meaty to take heavy braking loads. Valiants sizzled around the course, averaging 122-plus mph despite yellow-light caution periods putting heavy demands on the brakes. Combination of shoes designed to operate hot, and heat-dissipating drums, did job well.

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Valiants used ram-type manifold with a four-throat Carter carb, dual ignition points, special cam, stiff valve springs, and domed pistons that raised compression ratio to 10.5:1. They had problems with burnt pistons, but apparently ironed them out. HP was upped from 101 to 148 (advertised), to 180 (estimated).

Valiant crew was secretive, had a garage far removed from the track stashed away in the woods, showed at track only when it was time to race. Eventually, the story came out by assembling bits and pieces of information. The engine kit is a factory option at about \$280, and it's well worth it for someone who wants his Valiant to really go. These were stripped-down cars, with tachometers installed, turned to 5600 rpm. Marvin Panch's car used no roll bar, since he'd seen photos of Valiants being rolled at the factory. The roof held; only thing that happened was windshield popped out.



Rear springs were stock, but choice of shocks varied among the drivers. Panch preferred light action-damping on the road course, but changed to stiffer units on the banking. The other two cars—#16 and #17—used heavy shocks for both. Goodyear tires are not exactly showroom stock.

10,000 MILES IN 5000 MINUTES!



Maintaining an average speed of 120 mph throughout the run was made possible by this rig on the "chase" car that refueled the test car at speeds up to 125 mph.



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FORESHADOWING THE YET-TO-COME Daytona Speed Events, Buick engineers and test drivers early this year set about to prove in a secret engineering test that a Buick Invicta could keep going for 10,000 miles at an average speed of 120 mph—without any mechanical breakdown. This meant that the speeds maintained around the Daytona tri-oval (scene of the test) would have to be more on the order of 125 mph to make up for the time lost in refueling and in driver changes. And here's where real ingenuity came in.



Pressure hose on the refueling car was extended to make connection with receptacle on the test car. It took only six seconds to transfer 15 gallons of fuel.



Buick engineers figured that the fewer stops made by the test car, the higher and the more consistent the speed could be. So why not a refueling car? What? A car that would refuel the test car *at speed*?

Taking a leaf out of the book on refueling jet jobs with JP-4, the two cars were fitted with equipment that would allow them to refuel on the fly. A tube running from the tank in the refueling car ran along one side and extended forward about six feet. When the forward part of the tube mated with a receptacle on the rear of the test car, gas poured in under 60 pounds pressure so that 15 gallons of gas were transferred in six seconds! A light would flash on the refueling car's instrument panel and the tube would be retracted. During the 3½ days' run 78 such transfers were made . . . but not without incident.

Earlier in the test phase, the Buick lasted only 23 hours before it had to come in because of clogged fuel lines. The mechanics blew them out and sent the car out again. Shortly, back in again. And over and over, the same thing. Then, with the engine running much too lean (because it just couldn't get the right amount of gas) it blew a piston.

The engineers discovered that the cause of the trouble was tire dust being kicked up by the test car and being sucked into the tube of the refueling car. By quickly fitting filters in both the receptacle of the test car and in the hose of the refueling car, they eliminated the trouble. And so, they started all over again—but with a new car.

Three thousand miles later a fan pulley became noisy. In the driver came, but in their haste the mechanics cross-threaded the bolts. Back in again at 6000 miles, it took 29 minutes to rethread the crankshaft and put on a new fan pulley. Keeping in lap-by-lap contact with the driver, they were able to speed up the car so that on the lap before the 9000-mile mark, the official timer told the Buick crew, "If your driver maintains that speed, he'll be doing 120.001 at 9000 miles."

Instructions to the driver went out: "Don't slow up. We'll refuel you at the speed you're running now." Though refueling speeds were normally high (115-118 mph), this one took place at 124.5 mph! The refueling car got onto the track as fast as it could, got up to its top speed, pulled into the top lane and as the test car came by, dropped into position behind it. Six seconds later the test car was refueled.

At 10,000 miles the run was completed—the total elapsed time being just under 5000 minutes—or an average speed of just over 120 mph! Unofficially, this broke many world records, but because it was not observed by USAC and/or FIA, the records are not recognized.

During the 3½ days' run they used six drivers, each of whom would drive the test car two hours, switch over to the refueling car for two hours, then rest for six. Planned pit stops to change over drivers took around 30 seconds. During this time they also checked the oil and if the car needed new plugs or new tires, those would be changed, too. It took five minutes to change plugs, 50 seconds to change four tires.

Earlier in the test the longest the tires lasted was 70 miles. When Firestone moved in and provided nylon cord racing tires they solved what could have been an impossible obstacle to overcome. Tire mileage then went up so that the longest period for one set was 1285 miles. Nine sets were used during the 10,000-mile run. The right front tire carried the most pressure, then the right rear; most of the load was outward because of centrifugal force.

Though mechanics pulled the left rear axle at 3000 miles and again at 6000 miles, these checks were merely precautionary and not necessary to keep the Invicta running. It's a real tribute to Buick engineering that no mechanical breakdowns were experienced in this long a run on such a car-consuming course.

"Refueling on the fly"—at speeds up to 125 mph on the Daytona tri-oval—enabled Buick engineers to keep an Invicta running for 3½ days at a 120-mph average

RAMBLER ROAD TEST



The "original" compact car still sets standards for practicality

CAR AT A GLANCE

Things we like

- Solid construction**
- Good vision and handling**
- Excellent fuel mileage**
- Adequate passenger and luggage space**
- Quiet, comfortable ride**
- Easy engine servicing**
- Large-capacity fuel tank**

Things we don't like

- Skimpy brake lining area**
- Hard-to-read speedometer**
- Restricted rear door opening**

IT ALL STARTED when George Romney, a man with the courage of his convictions, insisted that the American motoring public was entitled to, and would buy, a sturdy, compact, economical and practical automobile. He has been proving it ever since American Motors began producing the Rambler line of cars, a product that has continued to grab a big piece of the new car market without a complete yearly restyle or an attempt to conduct a horsepower race at the expense of fuel economy. There is good evidence to indicate that the decision of the Big Three to enter the compact field was aimed more at getting some of Rambler's business than competing with the imports.

American Motors not only proved the worth of compact cars but probably set many of the standards, such as unit bodies, engine size and wheelbase, by which Detroit patterned their 1960 "smaller" cars. The in-line six, which was lost in the shuffle of mammoth ohv V8s, has suddenly come to life as a great, reliable economy engine. American Motors knew

all the economy. Far-head. Rambler is higher is as good. During Rambler's development, constant techniques for metal, and bodies for Rambler of the Rambler the other. Follow new motor, sible, the ers and go. Nature and the we checked error some our concern no matter speed of driving Rambler drivers But don't the car just speeds. The total (\$25.50) tion with with 10 luggage Advertisers transmit first gear the long necessary throat C l compr combination from the ally available While automati Rambler provides all portation maintenance power st not over excessive stopping Raising crowded cylinder do-it-your We en a fun car a ther practical

all the time. True, they make and sell V8s but their real economy powerplants are the in-line sixes, a 195.6-cubic-inch flat-head for the American and a similar version for the Rambler Six with overhead valves. While this displacement is higher than the biggest of the new compacts, fuel economy is as good as the best, and performance is excellent.

During the last 10 years, since the introduction of the Rambler, American Motors had their headaches too. Development of the present Rambler has come a long way, with constant improvements year after year in suspensions, techniques for fabricating unit bodies, better welding of sheet metal, and as early as 1957, a new method of protecting bodies from corrosion and rust by a dipping process. Today's Rambler American retains much of the general appearance of the 1950 Rambler, while the car we now know as the Rambler has its own particular styling that sets it apart from the other American Motors models.

Following MOTOR TREND's usual policy of road testing new models over as long a time and mileage range as possible, the Rambler Six was exposed to as many types of drivers and driving conditions as we had drivers and places to go. Naturally, accurate mileage and speed records were kept and the final figures indicated such good fuel economy that we checked them again just to make sure there was not an error somewhere in our mileage charts. The main source of our concern was the consistently high highway mileage, for no matter who drove the car—leadfoot or lightfoot—high speed or normal cruise, the fuel consumption for highway driving was never less than 25 mpg. It is easy to see why the Rambler Six has done so well in economy runs where trained drivers really squeeze every mile from every drop of fuel. But don't get the idea that the ohv six has to strain to power the car just to get economy; it cruises easily at high highway speeds.

The test Rambler, a four-door sedan with reclining seats (\$25.50), heater (\$76), and manual three-speed transmission with overdrive (\$112.50), is a roomy, comfortable car with 108-inch wheelbase, good passenger space, adequate luggage compartment and a curb weight of 3095 pounds. Advertised as developing 127 hp at 4200 rpm, the engine transmits enough power to the rear wheels to spin them in first gear on the dry surface of the acceleration course, yet the long-stroke low-end torque makes shifting almost unnecessary in town. A single-barrel Holley carburetor (a two-throat Carter is available as an extra-cost option) and 8.7 to 1 compression ratio accept regular grades of gasoline, a happy combination of good mileage on low-cost fuel. Latest word from the factory announces that the ohv six will be optionally available for the Rambler American.

While offering all sorts of options—from tinted glass to automatic transmissions and self-adjusting brakes—the basic Rambler, with a factory-recommended f.o.b. of \$2268, provides all that is needed for comfortable and sensible transportation. Further economy in original cost and operating maintenance is attained by virtually eliminating need for power steering and braking assists as the light engine does not overload the front end to provoke hard steering or cause excessive braking dive. The rear wheels do their share of stopping.

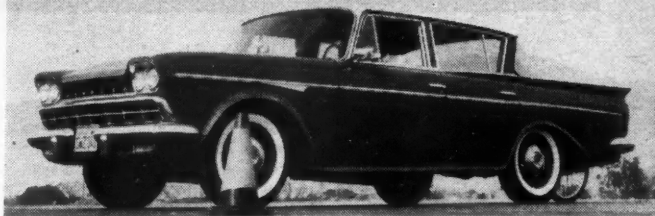
Raising the hood of the Rambler will give those used to crowded engine compartments a real surprise, for the six-cylinder engine has room to spare—a delight for both the do-it-yourselfer and the professional mechanic.

We enjoyed every minute of the Rambler road test. It is a fun car to drive, and its sales success continues to prove that there is a place in American motoring for a sensible practical domestic car.

continued on next page

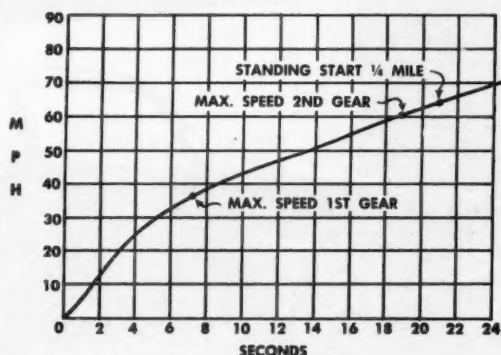
MT

'60 RAMBLER-6
ROAD TEST



Acceleration

0-45 mph 11.0 secs. 0-60 19.0
Quarter-mile 20.8 secs., 64 mph
30-50 8.7 45-60 8.0 50-70 10.1



Top Speed

Comfortable cruising From 55 to 70 mph
Maximum speed 85 mph

Stopping Distance

From 60 mph to standstill 194 ft.
(In 4.3 secs. with maximum of 0.70-G deceleration)

Stop after maximum acceleration to end of 1/4-mile 198.5 ft.
(In 4.5 secs. with maximum of 0.70-G deceleration)

Gas Mileage

Over-the-road averages	Mpg	Mph
2-lane, 4-lane open road	25.9	65
2-lane, winding mountain road	25.0	50
In overdrive	28.1	65
4-lane, level freeway	26.6	55
In overdrive	28.5	55
Overall average for 400 miles	25.6	56.3
Overall average for 460 miles (overdrive)	28.3	60
City driving	20.1	—
In overdrive	22.3	—
Constant speed, level road fuel checks	31.2	30
In overdrive	33.4	30
In overdrive	29.9	45
In overdrive	30.8	45
In overdrive	28.9	60
In overdrive	30.1	60

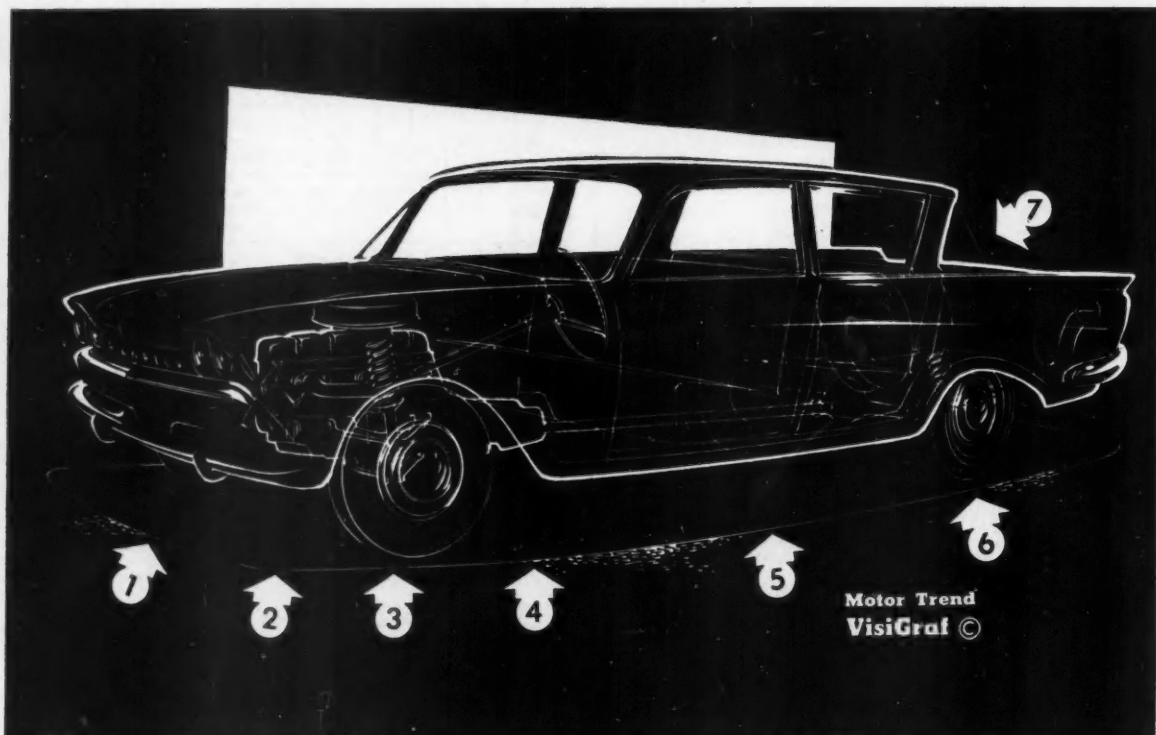
by Charles Nerpel, Technical Editor

'60 Rambler Six Super

1. BRAKES Wagner servo-type hydraulics with cast-iron drums and bonded linings total out to 136.3 sq. ins. of effective braking area, or 88 sq. ins. per ton. Low-speed stopping is adequate with plenty of master cylinder pressure available through good mechanical linkage at the pedal, eliminating need for power assist, but the car lacks stopping power to match its speed capabilities in the higher ranges. Compact cars of this type should take advantage of their maneuverability and fairly light weight to increase stopping power by adding

angle and height, and low flat hood area give excellent driver comfort and visibility. Instrumentation and controls are well placed but speeds are hard to pinpoint at a glance due to small, hard-to-read speedometer calibration. Instruments do not glare at night, and there are no internal reflections to confuse the driver.

5. SEATING, FRONT AND REAR Rambler surpasses all other compacts in head- and hiproom and is second to the Lark by a small margin



just a few more square inches of lining area. Self-adjusting brakes of the same area are optional, as is vacuum assist.

2. ENGINE, TRANSMISSION Long-stroke, in-line ohv six combines fuel efficiency and low-speed torque. With a piston displacement of 195.6 cu. ins., the 8.7:1 compression ratio accepts regular grades of fuel on a very thrifty basis. Advertised as producing 127 hp with a single-barrel carburetor, it is offered with a power-increasing 2-bbl. carburetor option that adds 11 more hp. These engines are not high-winding powerplants and they develop their torque in the 1600-1800-rpm range, making stick shift overdrive transmissions the best way to get the most efficient operation under all driving conditions.

3. FRONT SUSPENSION Independent unequal A-frame suspension is sprung by coil springs over telescoping hydraulic shocks, the entire unit mounted at the top, above center of gravity. Mechanical steering is a Saginaw unit, overall ratio 23:1, with 4.7 turns lock-to-lock and a 37.2-ft. turning circle. Steering is positive and light without power assist but requires a little more effort when backing up.

4. BEHIND THE WHEEL Modified wrap-around with advantages of vision and style, but no distortion. Wheel angle and position, seat

in legroom. Seats are well padded and angled for both comfort and vision. Rear seat passengers get a break as they are high enough to see where they are going. Reclining front seat option at \$25.50 allows seat back angle adjustment to ease driving fatigue or reclines fully for roadside nap.

6. REAR SUSPENSION Live axle suspended on coils is located by panhard rod. Torque loads are taken through driveshaft torque tube and shocks are tubular hydraulics, sea-leg mounted. Conventional differential has standard 4.11:1 ratio with the overdrive transmission, but a 4.38:1 is optional, as is a "Twin-Grip" limited-slip differential. Spring rates on rear coils can carry full passenger load without bottoming, yet give smooth ride when lightly loaded.

7. BODY DESIGN Space-consuming streamlined styling has been avoided in the interest of more usable interior and luggage space. Unitized body is pleasing but almost "box-like" compared to current trends, but six adults can ride comfortably in the Rambler without squeezing or removing their hats. Doors open wide, but rear entry and exit are somewhat restricted by seat taking up most of the usable opening. Trunk is compact but generous with really usable space, and decklid opens clear down to bumper, avoiding high lifts.



**SPECIAL
KARTING
SECTION**

KARTING

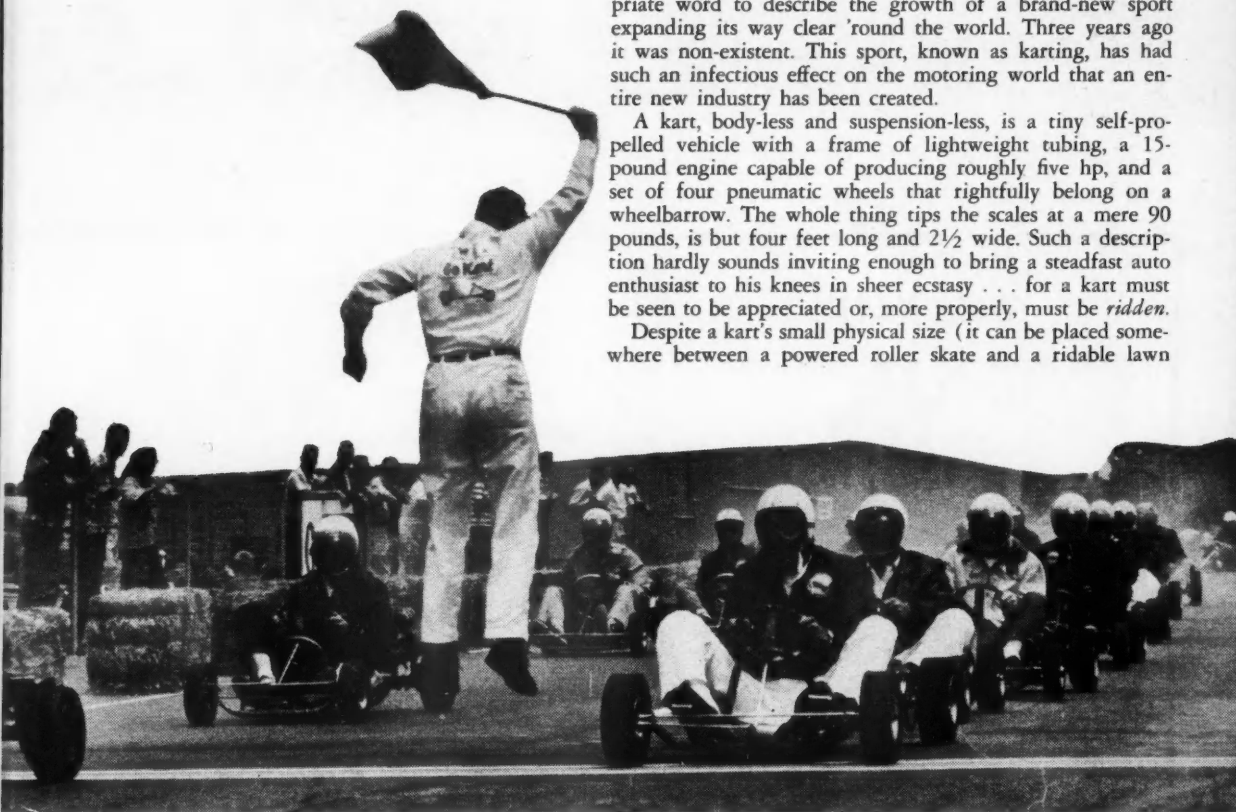
The When, Where and Why of It

by Spence Murray

PHENOMENAL is a highly overworked word used so repeatedly by advertising copywriters that it somehow fails today to conjure up much of a picture of the extraordinary or the wonderful. But "phenomenal" remains the only appropriate word to describe the growth of a brand-new sport expanding its way clear 'round the world. Three years ago it was non-existent. This sport, known as karting, has had such an infectious effect on the motoring world that an entire new industry has been created.

A kart, body-less and suspension-less, is a tiny self-propelled vehicle with a frame of lightweight tubing, a 15-pound engine capable of producing roughly five hp, and a set of four pneumatic wheels that rightfully belong on a wheelbarrow. The whole thing tips the scales at a mere 90 pounds, is but four feet long and 2½ wide. Such a description hardly sounds inviting enough to bring a steadfast auto enthusiast to his knees in sheer ecstasy . . . for a kart must be seen to be appreciated or, more properly, must be ridden.

Despite a kart's small physical size (it can be placed somewhere between a powered roller skate and a rideable lawn



continued

Here's the little-known beginning of a fun hobby that in less than three years has blossomed into a \$3.5-million sport last year.

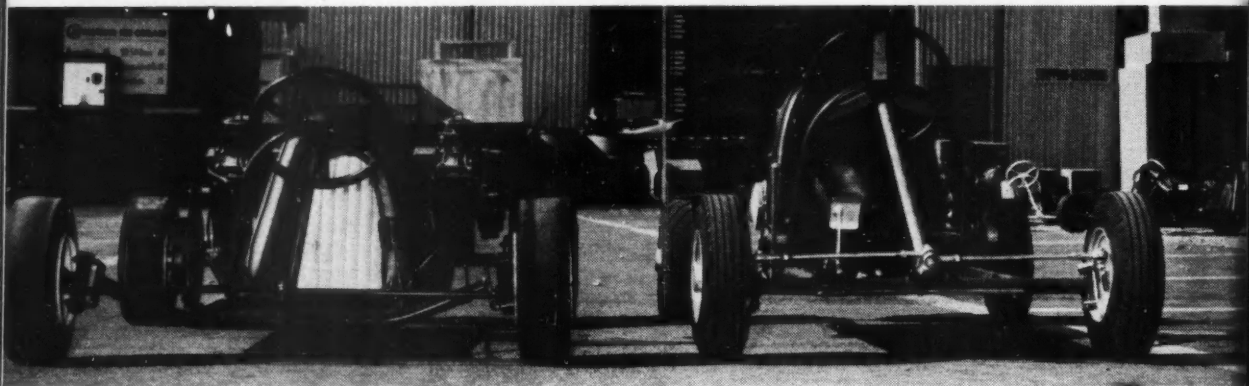
mower) it can bring both exciting pleasure and spine-tingling thrills to its driver. The high speed, quick-reacting steering, and ear-piercing whine of a tightly revved engine are all there. So is the eye-stinging wind, the self-mastery of a high-performance racing car, and the excitement of wheel-to-wheel racing in true Grand Prix fashion. The kart course runs not in a monotonous oval but in a series of alternately long and short straights and around tire-screaming esses and spiraling radius bends.

To forestall any thoughts of a kart being a toy, one manufacturer ran one around a 2½-mile road-racing course for seven days and seven nights—wearing out 28 drivers during the run, and amassing the staggering total of 5260 miles!

The joys and thrills of karting have blossomed into a full-scale national pastime in less than three years and fostered an industry that did a whopping \$3.5 million worth of business last year—with at least twice that volume expected this year. But the karts had to have a beginning, for they didn't stem from another source (as an outgrowth of quarter-midgets, for example). A backward look at the origin of the first kart reveals a true Horatio Alger story . . .

"The Father of the Karting Sport" proclaims the inscription on a bronze plaque on the wall of a Los Angeles home. The owner of the unique award is long-time racing enthusiast Arthur Ingels who, last year, was gratefully given the

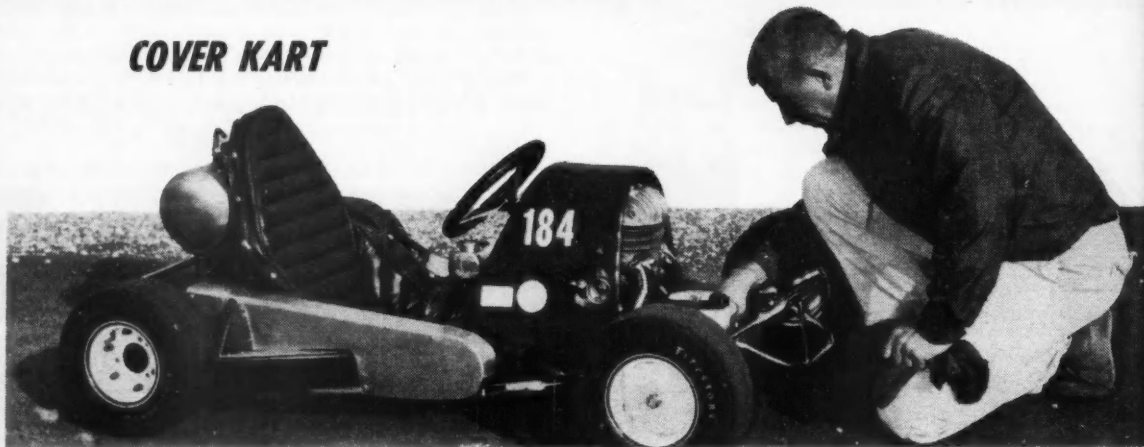
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The new meets the old. Art Ingels' original kart, the first of six identical to it, reflects early era of narrow, high karts. In

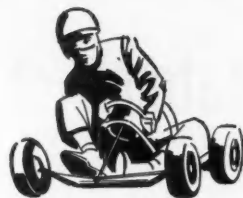
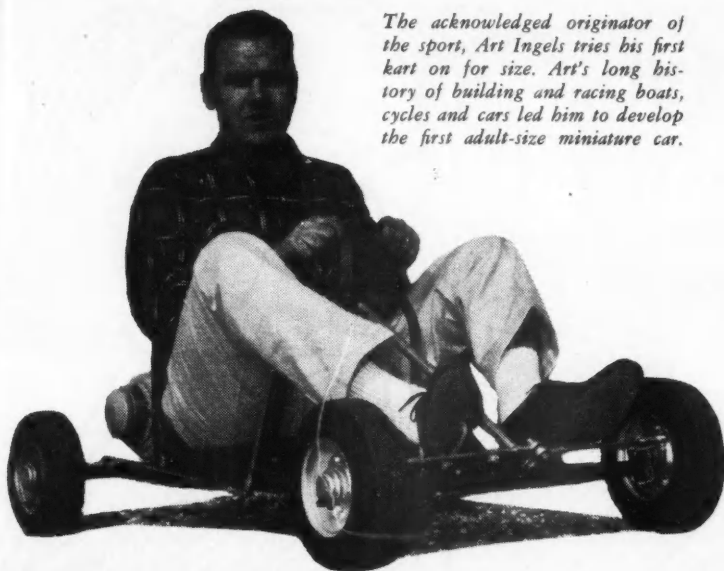
contrast is late-model kart with ultra-wide wheelbase, minimum ground clearance and far lower overall height for more safety.

COVER KART

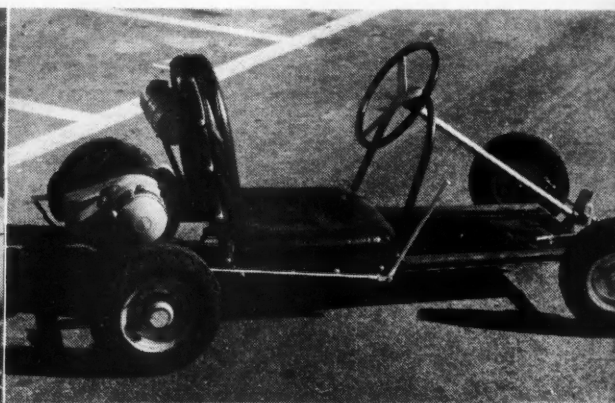


Kart of the future? Sportscar driver Duffy Livingstone and his front-engine kart. A 20-hp Puch cycle engine powers the 230-lb. machine which has its transmission gears removed to conform to kart specs. Built strictly as an experiment in kart development, it may herald start of a new karting era.

The acknowledged originator of the sport, Art Ingels tries his first kart on for size. Art's long history of building and racing boats, cycles and cars led him to develop the first adult-size miniature car.

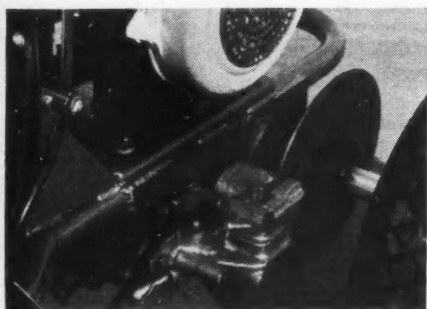
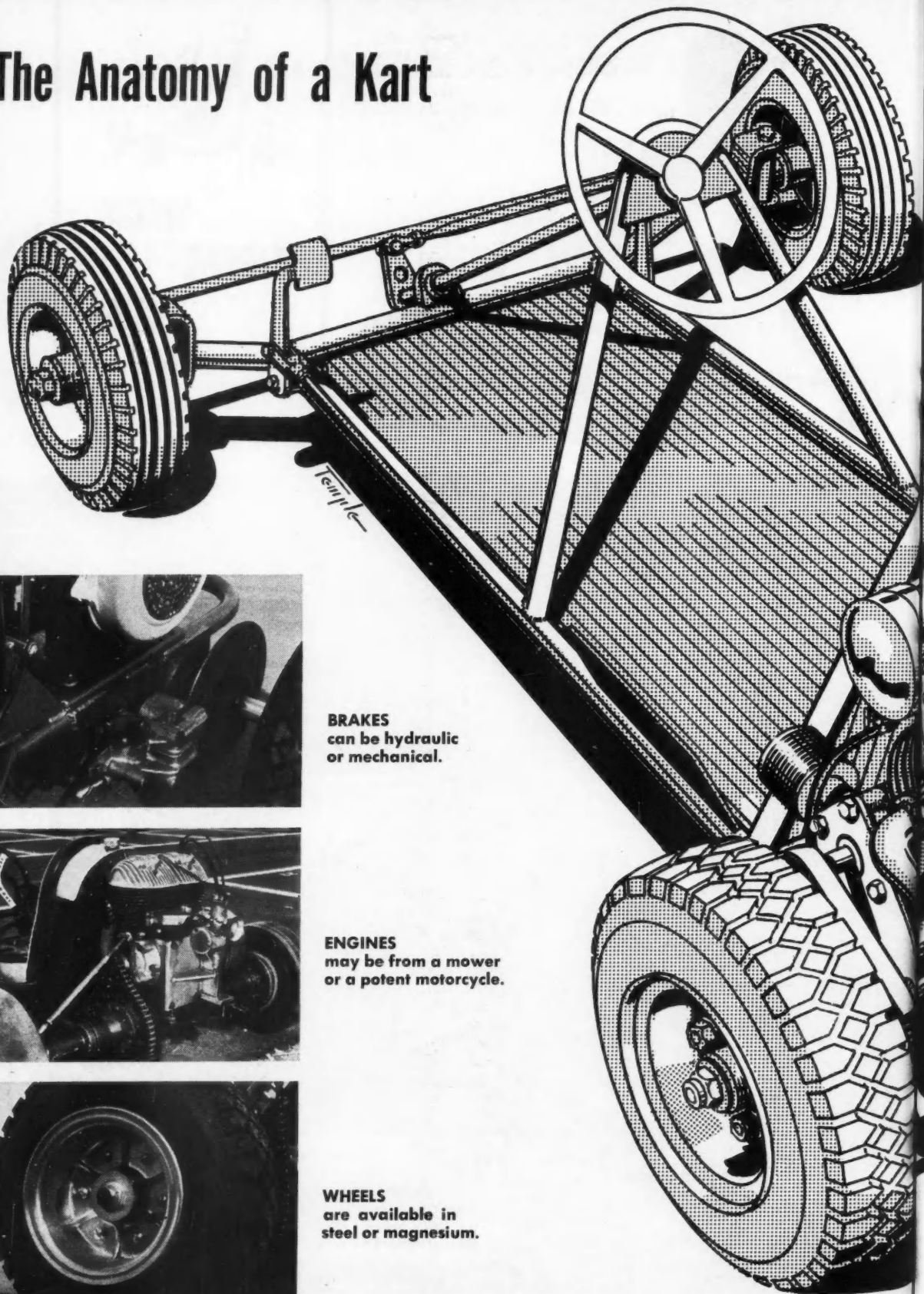


SPECIAL KARTING SECTION

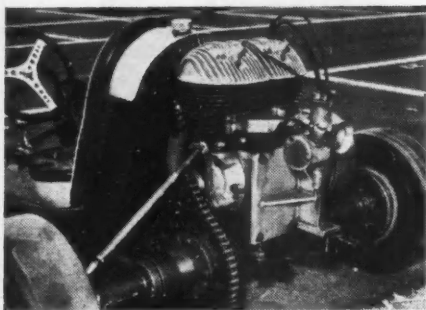


The first kart had a hand-operated brake (see inset) and used for power a West Bend 2½-hp two-cycle mower engine. Though kart was thought to be essence of simplicity, later models saw the engine moved closer to the drive wheel, eliminating the jackshaft and one pair of sprockets. This kart is still in weekly use.

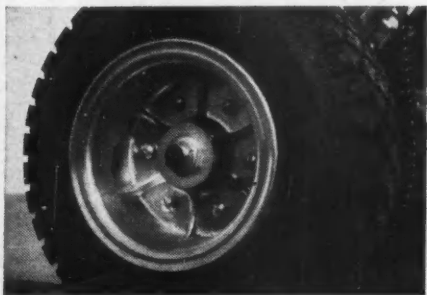
The Anatomy of a Kart



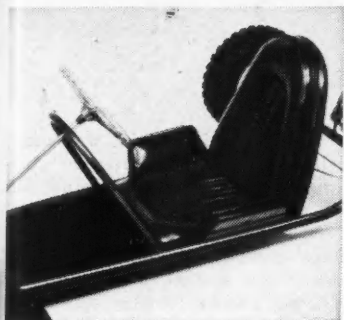
BRAKES
can be hydraulic
or mechanical.



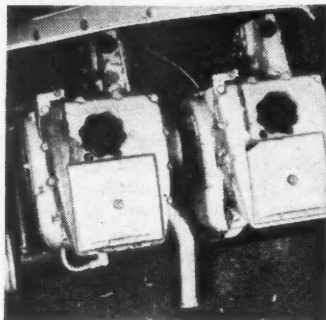
ENGINES
may be from a mower
or a potent motorcycle.



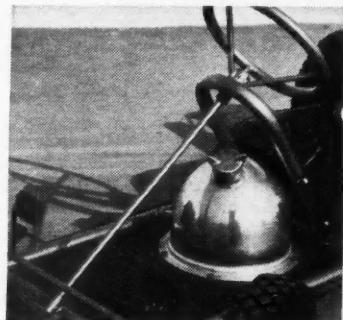
WHEELS
are available in
steel or magnesium.



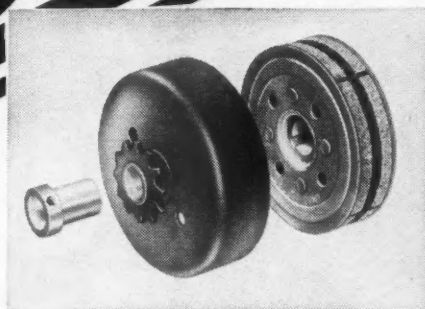
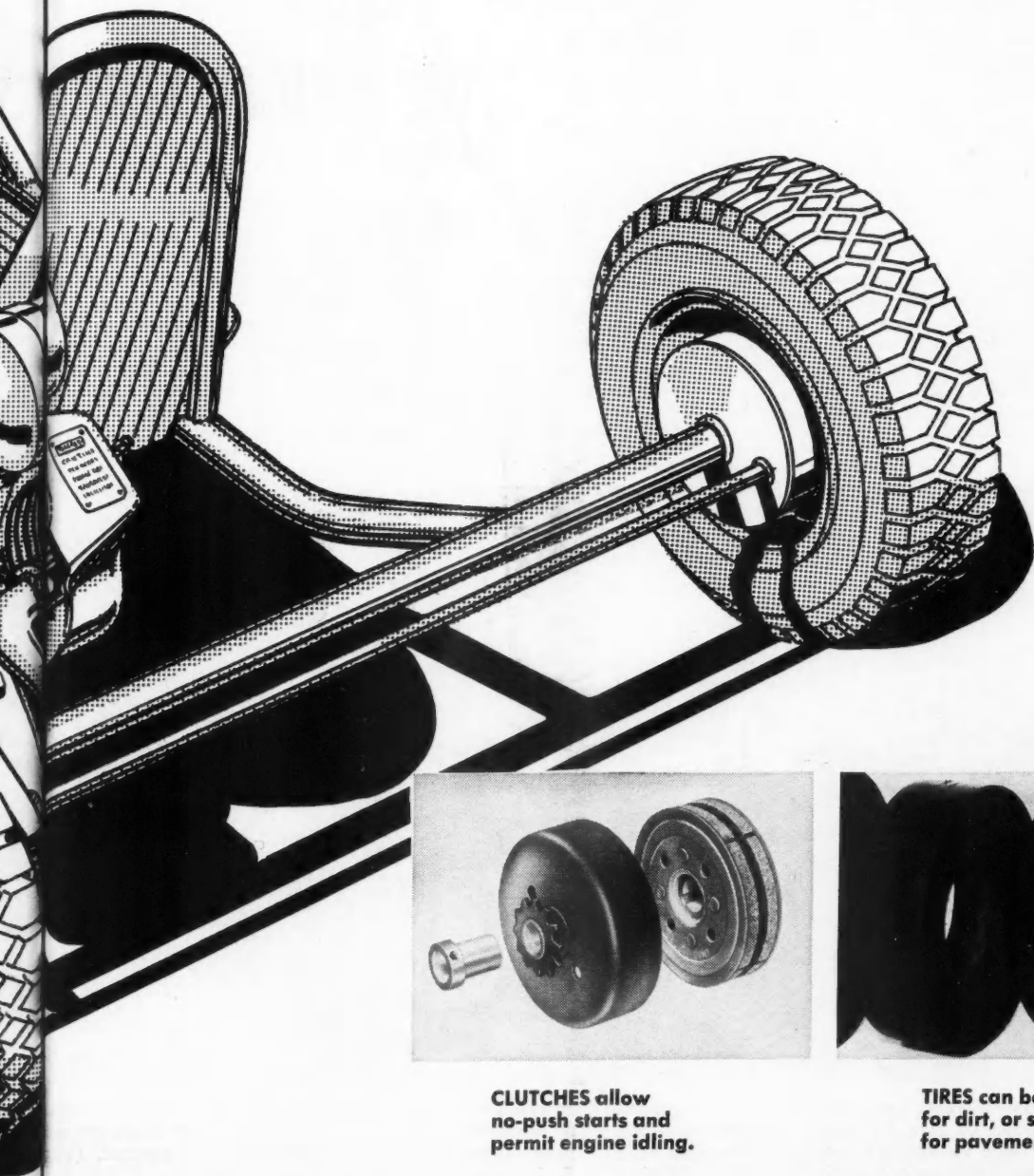
UPHOLSTERY eases the kart's springless ride.



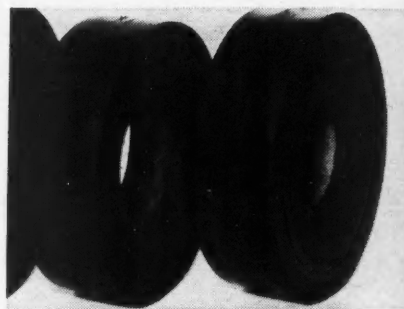
POWER is at a peak with a dual installation.



TANKS can be installed wherever there's room.



CLUTCHES allow no-push starts and permit engine idling.



TIRES can be treaded for dirt, or slick for pavement racing.

THE PROSPECTIVE KART BUYER faces a perplexing problem. While buyers of Detroit cars decide between a couple dozen cars, and those who prefer imports choose from an array of about 60, a kart buyer must make up his mind from nearly 300 domestic makes that are available!

The choice can be somewhat narrowed if prospective buyers keep in mind that there are certain rules and regulations governing competitive kart racing. The basic rules were originally set down by the pioneering Go Kart Club of America and have since become standard among the several other national associations. While many karts are manufactured within the limits of such regulations, there are those that fall short. The wise buyer should avail himself of a set of regulations (write to the GKCA, P.O. Box 806, Azusa, Calif.) and read them carefully before selecting a particular brand. Also, exercise care in picking a make that uses the best available materials and name-brand components (engines, wheels, tires, etc.).

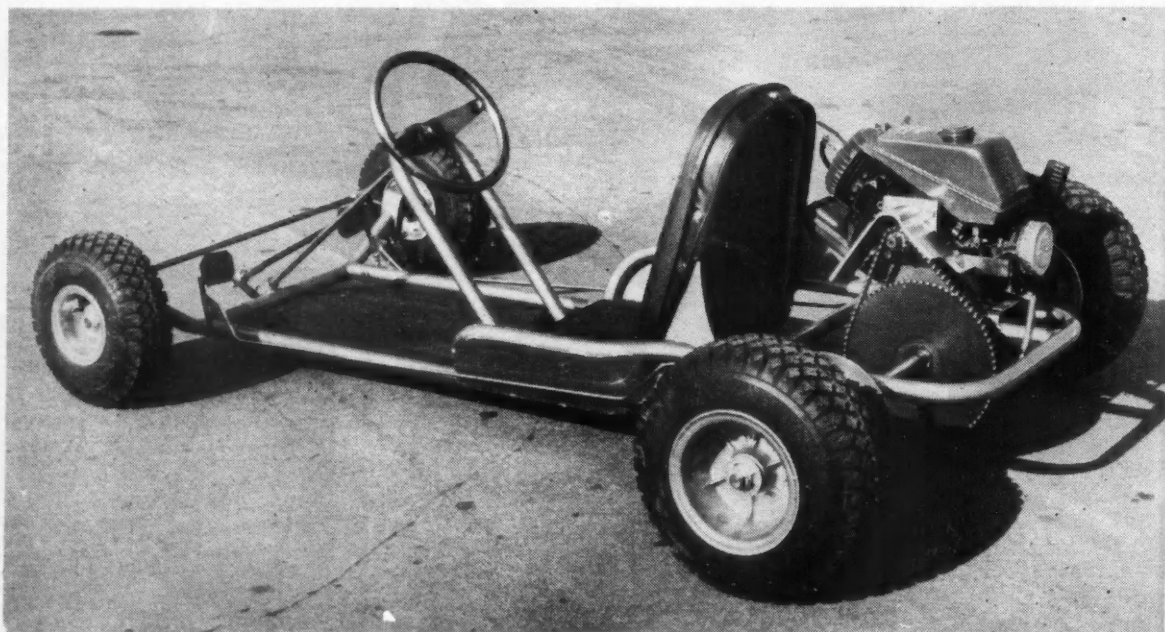
As for the choice of a specific kart model from any one builder's lineup, the beginner is advised to get into karting as economically as possible. Until he becomes more adept as a handler, he should also stay within the slower racing classes. It is foolish for a novice to buy a Class C machine of maximum allowable engine displacement (16.5 cubic inches) and find that he is unable to control all that power. It's better to buy a Class A Kart (up to 5.8 cubic inches), then add a second engine later. Improved driving prowess would allow him to move up to the more potent B Class (with a top of 11.6 inches).

The karts shown here are but a representative sampling of those currently available in a still-expanding market. All are of top-notch quality, are competitively priced, and will provide their owners with virtually years of fun and motoring pleasure. Top speed and general performance are about the same, since these karts are all built to the exacting GKCA rules, and are all available with the same options in engines, drive sprocket ratios, and tire sizes. Further information and prices may be obtained from the respective manufacturers listed.

HOFFCO Newest addition to this well-known line of karts is the Hurricane (upper right), featuring a live rear axle for powering both wheels and an enclosed steering shaft fitted with bearings top and bottom. Light magnesium wheels come as standard equipment as do dash-mounted on/off switches, chain guards (a recent GKCA ruling) and Comet clutches. Engine options are Clinton, West Bend and Power Products, in dual or single combinations, so the buyer can choose a Hurricane to fit any of the racing classes. (Hoffco Inc., 409 N. Eighth St., Richmond, Ind.)

THE POPULAR KARTS

DART The newest trend in karting is the switch to live rear axles, and the Dart Super "K" series cars include this feature on all models. The model at lower right is twin Power Products powered, though also available are McCulloch engines, West Bends and Clintons, in single or twin installations. An outstanding feature is the two-gallon-capacity fuel tank, ideal for the long races that karters are beginning to stage. Wheel sprockets are aluminum to save weight. (Rupp Mfg. Co., Kart Division, 302 Bowman St., Mansfield, Ohio)

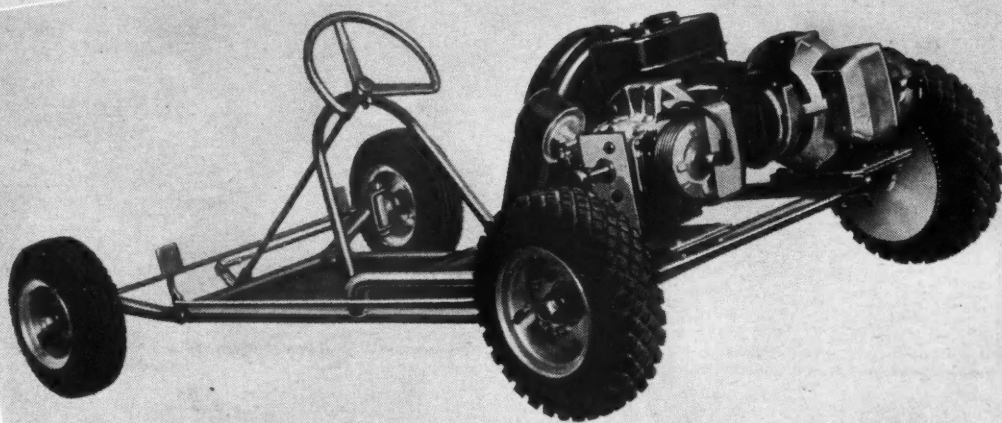
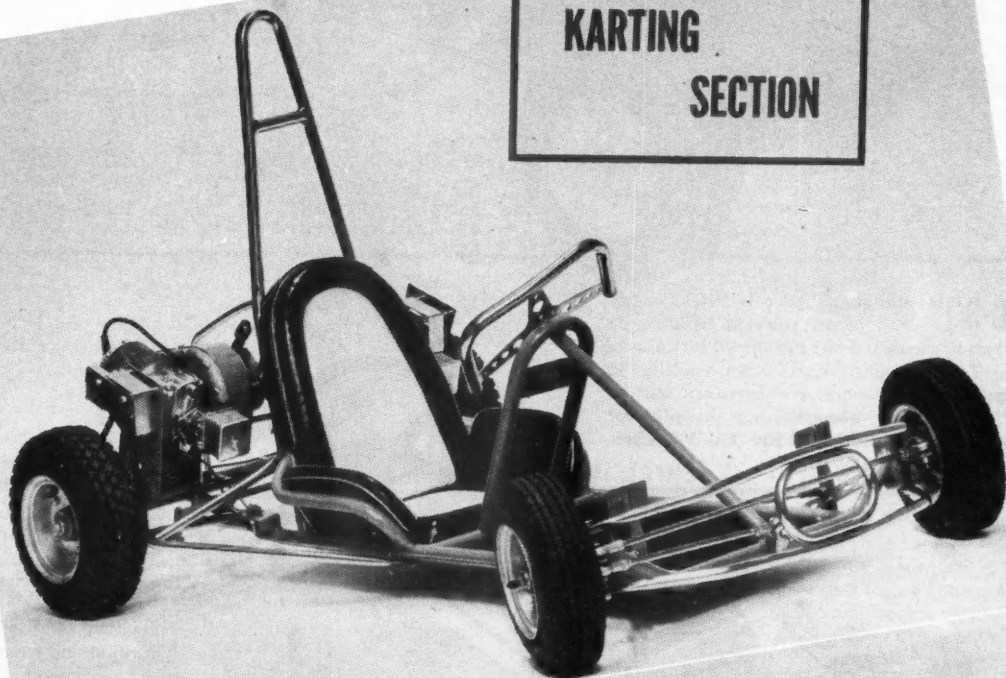


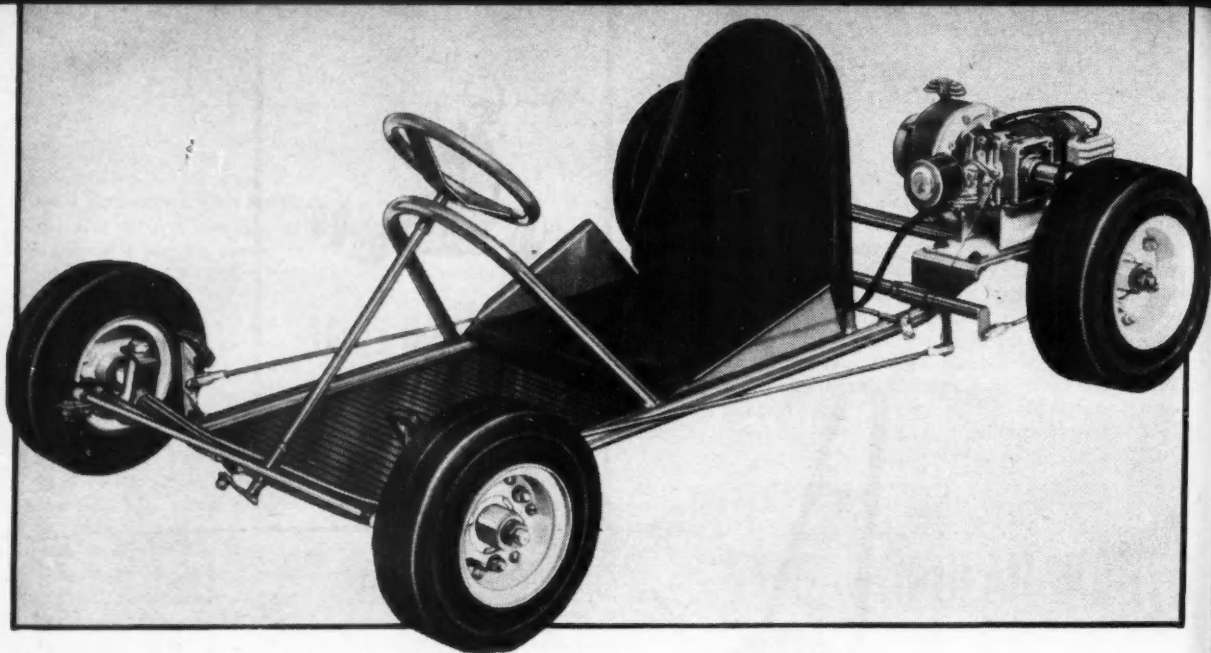
BUG This famous Azusa, Calif. firm has recently announced a new line of karts for 1960. Featuring a live axle and hydraulic brake, the new Bug is available with either single or dual Clinton A400 engines, or single or dual McCulloch

engines. Live rear axle permits the powering of both rear wheels, for the utmost in traction. The Bug comes with upholstery and paint. Aluminum Timken bearing wheels are standard. (Bug Engineering, Box 91, West Covina, Calif.)

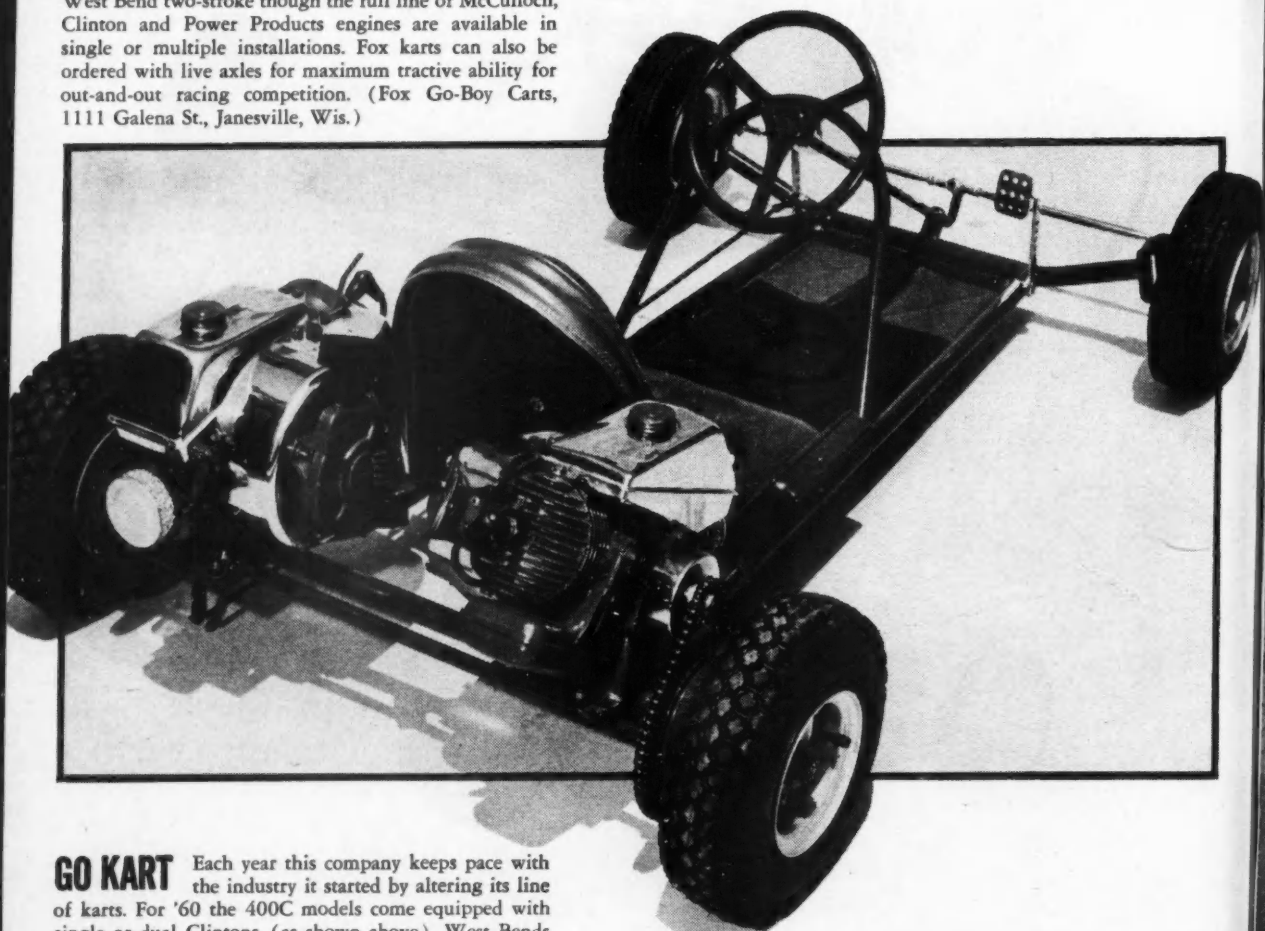


SPECIAL KARTING SECTION





FOX GO-BOY Illustrated above is 1960 Go-Boy kart model powered by a single West Bend two-stroke though the full line of McCulloch, Clinton and Power Products engines are available in single or multiple installations. Fox karts can also be ordered with live axles for maximum tractive ability for out-and-out racing competition. (Fox Go-Boy Carts, 1111 Galena St., Janesville, Wis.)



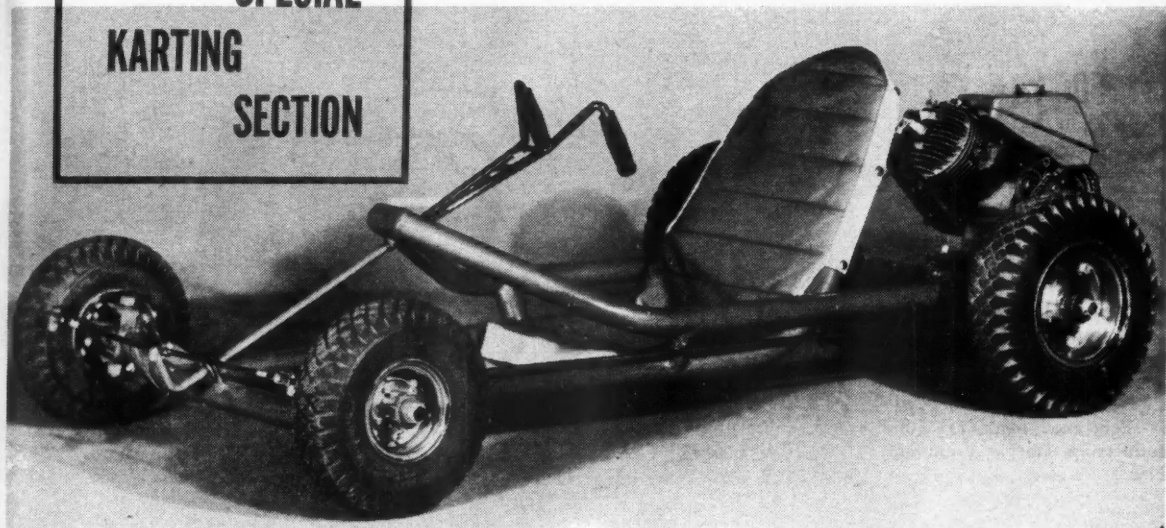
GO KART Each year this company keeps pace with the industry it started by altering its line of karts. For '60 the 400C models come equipped with single or dual Clintons (as shown above), West Bends or McCulloch engines. Late last year Go Kart helped the entire sport by proving karts are not playthings when one production model traveled 5260 miles in seven days. (Go Kart Mfg. Co., Inc., 6350 Irwindale, Azusa, Calif.)

GOPH
built-in
of popu
bination
least ex
are clut
upholste
1311 12



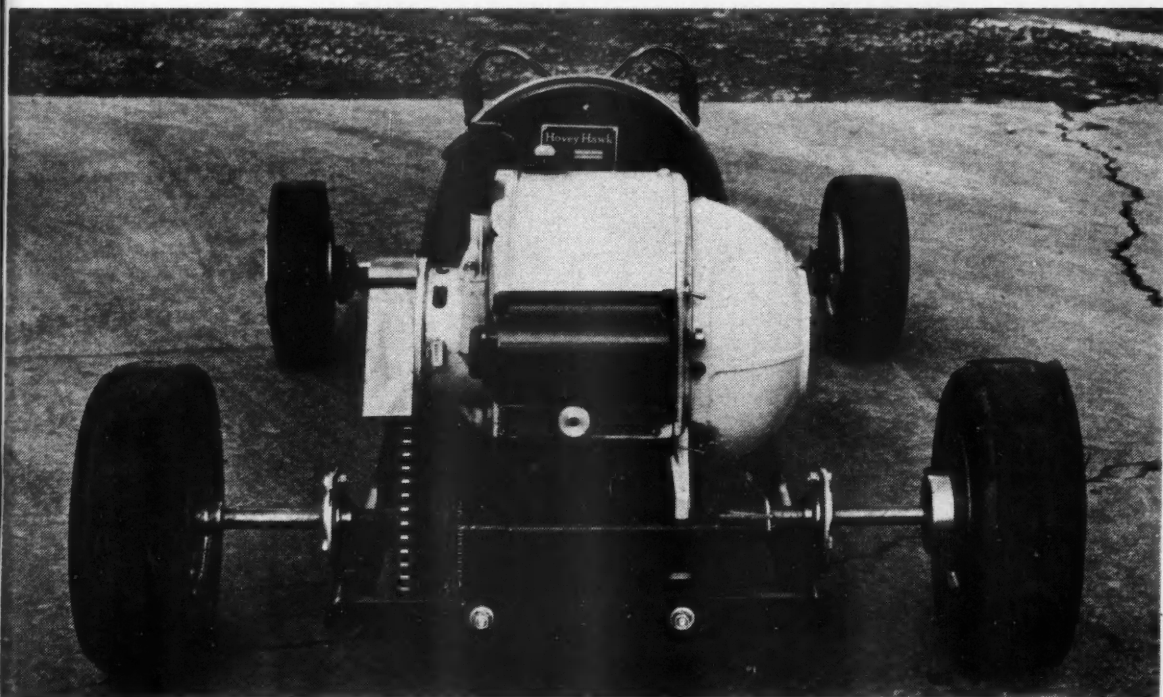
SPECIAL KARTING SECTION

THE POPULAR KARTS *continued*



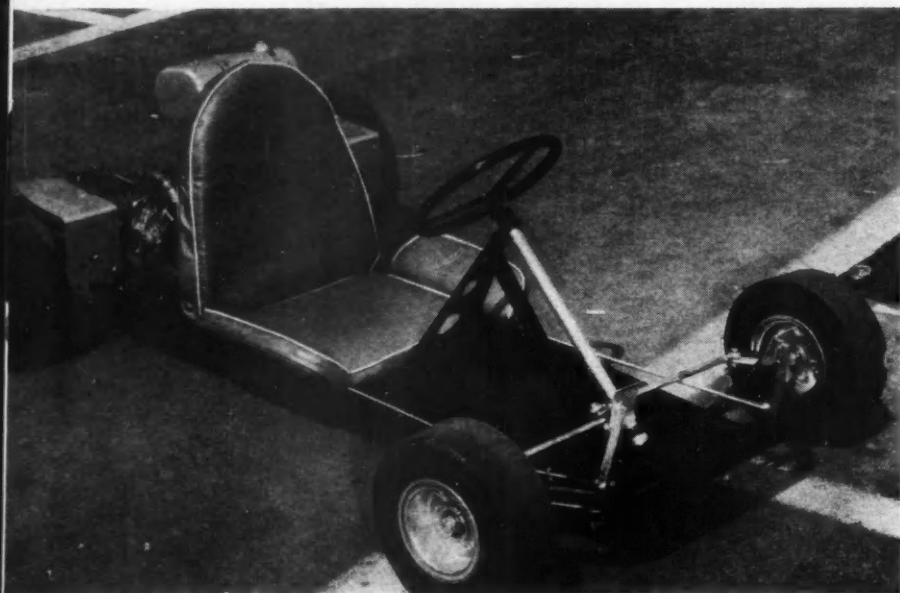
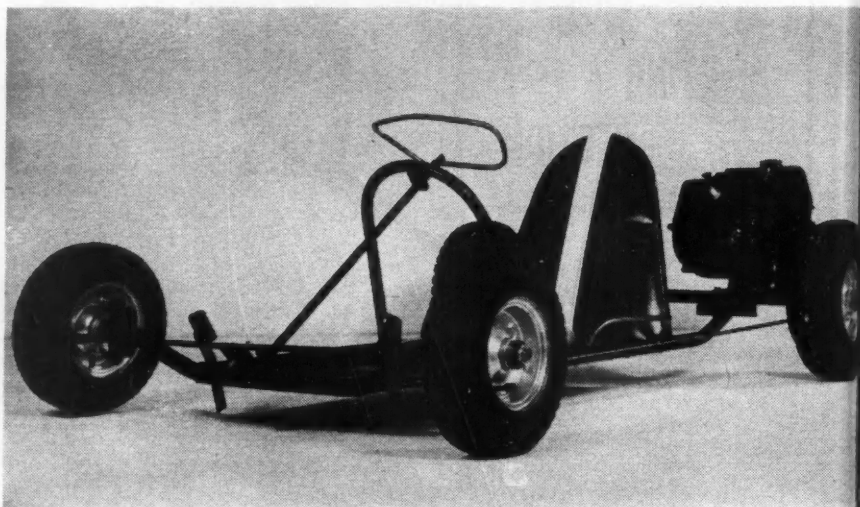
GOPHER Made in Iowa, this popular kart features an especially rugged, cleverly designed frame that affords built-in seat siderails for maximum comfort. Again, a full line of popular two-stroke engines is available either in dual combination or singly. The version above mounts one Clinton, is the least expensive of Gopher's lineup. Extra-cost items available are clutches, slick racing tires, choice of red or white colors, upholstery and quality-built live axle. (Gutknect Enterprises, 1311 12th St., Nevada, Iowa.)

HOVEY HAWK The Hawk below is a twin-cylinder, Mercury-powered version with live axle, one of the first karts to incorporate this design in production. Brake and throttle cables run inside frame tubes to prevent jamming by dirt or driver's clothing. An added note in favor of the live axle is the easy switch of rear tires to prolong rubber life. An optional extra is individually sprung front wheels, through clever spindle-mounted coils, to reduce vibration. (Hovey Hawk, 701 Heinz, Berkeley, Calif.)

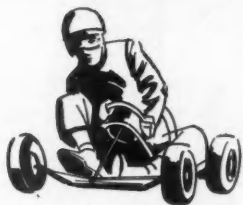


THE POPULAR KARTS *continued*

LI'L 500 At right is the single-Clinton - powered 500, though a full line of two-strokes is available singly or in multiple form. The kart features simple design and construction, eliminating a lot of troublesome maintenance, but it easily withstands the abuse heavily-built adults ask of it. Safety seat rails are standard equipment as are roller bearing-equipped wheels. Eleven-inch knobby rear tires are stock, but slicks of any size can be ordered at slight extra cost. (Li'l 500 Industries Corp., Fremont, Neb.)



PERCIVAL Illustration at left is of a kart designed by Frank Kurtis, driven in prototype form by Indianapolis winner Rodger Ward who passed judgment on the kart before it went into full-scale production. A Hellcat model, the least expensive of two versions, is driven by a single Clinton, while the Wildcat is urged along by either twin Clintons or West Bends. As with all the karts on these pages, it meets all the safety requirements of the national karting associations and racing groups. (Percival Mfg. Co., 1440 Walnut, Des Moines, Iowa)

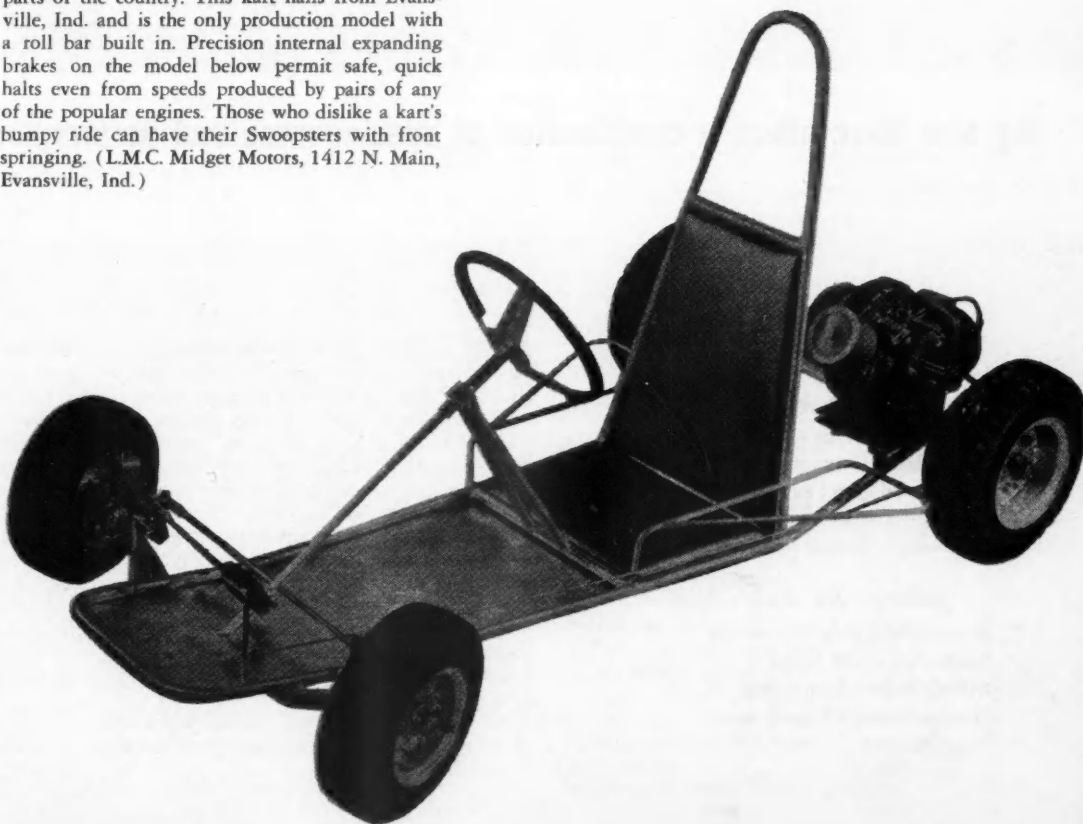


SPECIAL KARTING SECTION



SIMPLEX The Mark I version of this popular kart can be purchased with any of the popular aircooled two-strokes in one-engine form, or pairs are available on the Mark II series. Chassis of both are identical and they can be relied upon to withstand hard usage. Either the Mark II (at left) or Mark I can be ordered with slick racing tires, upholstery and a host of other equipment that allows the buyer to have his Simplex practically custom-built at the factory. (Simplex Mfg. Corp., 540 N. Carrollton, New Orleans, La.)

SWOOPSTER Unlike Detroit-made cars, karts are being built in all parts of the country. This kart hails from Evansville, Ind. and is the only production model with a roll bar built in. Precision internal expanding brakes on the model below permit safe, quick halts even from speeds produced by pairs of any of the popular engines. Those who dislike a kart's bumpy ride can have their Swoopsters with front springing. (L.M.C. Midget Motors, 1412 N. Main, Evansville, Ind.)



MERCURY ROAD TEST



Big new Merc offers a combination of spaciousness and performance

CAR AT A GLANCE

Things we like

*Spacious interior
Multi-drive transmission
Reasonable fuel economy
Good performance
Highway cruising comfort*

Things we don't like

*Windshield side distortion
Excessive wind noise
Instability in fast turns
Transmission of road noises
Poor brakes*

ADVERTISED AS "THE BIG NEW MERCURY," the 1960 model certainly is big. Nearly 18½ feet long with a 126-inch wheelbase, interior space is proportionately large. The test car, a Montclair four-door hardtop, was the roomiest passenger vehicle MOTOR TREND has so far encountered in the 1960 domestic models. Add to the spacious interior an illusion created by a long, wide hood and low forward location of the padded dash cowl, and the interior seems even bigger.

Obviously, the Mercury is not compact, makes no attempt to be, but gets surprising fuel economy (see mileage chart) from a big 430-cubic-inch engine pulling a curb weight of 4315 pounds. You will need a long garage and a mildly graded driveway ramp to clear the rear overhang, but Mercury engineers and stylists have hit a happy medium here by providing enough upsweep for most normal conditions without spoiling the styling concept.

Built into this spacious interior are a few hazards that can be put only in the "why didn't they?" category. First of all

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there is a knee-knocking dogleg cornerpost that curves around the wrap-around windshield. Modification here would certainly ease exit and entry and at the same time eliminate the bad distortion in the windshield. Second, this time a shin basher, is the glove compartment door. Deeply recessed, the padded cowl provides wonderful leg- and knee-room for front seat passengers. Set into this cowl is a large glove compartment door, hinged at the bottom and stopped, just after hitting the shins, by a pair of plastic-covered cables. This punishment is hardly worth the effort, however, as the wide, thick door uncovers a compartment so long and shallow as to be nearly impractical for carrying anything except a submarine sandwich. The whole design seems like an afterthought.

As a highway or turnpike cruiser, the Mercury is smooth, powerful and comfortable, with the possible exception of excessive wind noise at cruising speeds with windwings open. On a trip to Kingman, Ariz., any attempt to ventilate the car by windwing or window adjustment raised the interior noise level to where normal conversation was difficult. Seating, vision and power steering provide ease of operation on long trips, but off the smooth main roads the car tends to follow shallow pavement grooves and transmits road noise of coarse surfaces to the passenger compartment. On winding roads, stability is not as good as previous models. Lean has been greatly reduced, but the car gives a sensation of lifting in the corners and requires alert steering correction.

Over the gravel side roads of our Western desert, which can be termed extreme shakedown test conditions, the quiet feeling of solidity gave way to body and suspension rattles. Rear seat passengers will feel more than hear transmission of fine corduroy surfaces under these conditions. We also noticed poor luggage compartment sealing against dust, yet no water leaks were apparent after driving through heavy rain in the mountains.

Under certain conditions of steady high-speed cruising, the test-car engine would surge, the effect being much like opening and closing the throttle slightly. We understand this has been one of the bugs the Mercury factory has been working very hard to eliminate, and the cause has been centered in the two-barrel carburetor system. This surge apparently did not affect our fuel economy, which we said earlier was good, nor did it hinder the rapid acceleration, either in the passing-speed range or pulling away from a dead stop.

Speaking of passing speeds, punching the throttle hard produces a crisp downshift into intermediate gear anywhere from 30 to 75 mph, and the big Merc really takes off. Nice to have this if passing space is limited, but high-gear acceleration in the 55-75-mph range is more than adequate for average passing conditions. The "L" or LOW selector provides good engine braking and out-of-the-turn acceleration for mountain driving, as it will hold the transmission in second gear at speeds from 25 to about 75 mph. Don't suddenly try to go into low range at speeds over 75 mph, for while it will downshift into second, it imposes a severe strain on the transmission.

Mercury has come a long way since it was introduced as a more powerful companion to the Ford. Styling features distinguish it from other cars of the parent company, and it has become a strong competitor in its price and size class. Recommended f.o.b. Detroit base price is \$3394. Power brakes and steering, radio, heater, whitewall tires, multi-drive transmission, rear fender shields, mirrors, etc. (with which the test car was equipped) bring this price up to \$3845.30—a lot of car for the money.

continued on next page

MT '60 MERCURY MONTCLAIR ROAD TEST



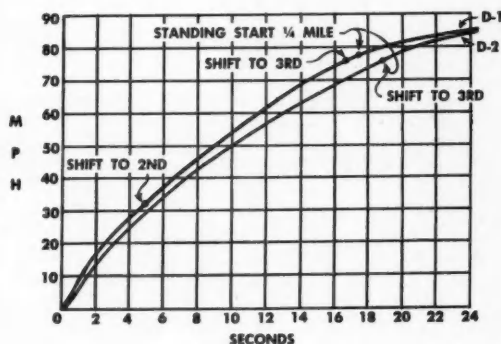
Acceleration

D-1 RANGE

0-45 mph 7.9 secs. 0-60 12.0
Quarter-mile 17.7 secs., 76 mph
30-50 4.6 45-60 4.1
50-80 10.9

D-2 RANGE

0-45 mph 8.3 secs. 0-60 13.1
Quarter-mile 18.6 secs., 75 mph
30-50 5.0 45-60 4.8
50-80 11.1



Top Speed

Comfortable cruising From 50 to 90 mph
Maximum speed 110-115 mph

Stopping Distance

From 60 mph to standstill 217 ft.
(In 4.7 secs. with maximum of 0.78-G deceleration)

Stop after maximum acceleration to end of 1/4-mile 317 ft.
(In 5.7 secs. with maximum of 0.82-G deceleration)

Gas Mileage

Over-the-road averages	Mpg	Mph
2-lane, 4-lane high-speed road	15.1	61.2
2-lane desert, gradual climb	15.8	60.7
2-lane level road, high altitude	16.3	55.0
4-lane divided freeway	17.7	54.6
Overall average for 911 miles	16.2	57.8
City driving	13.4	—
Constant speed, level road fuel checks	19.5	30
	19.0	45
	15.5	60

by Charles Nerpel, Technical Editor

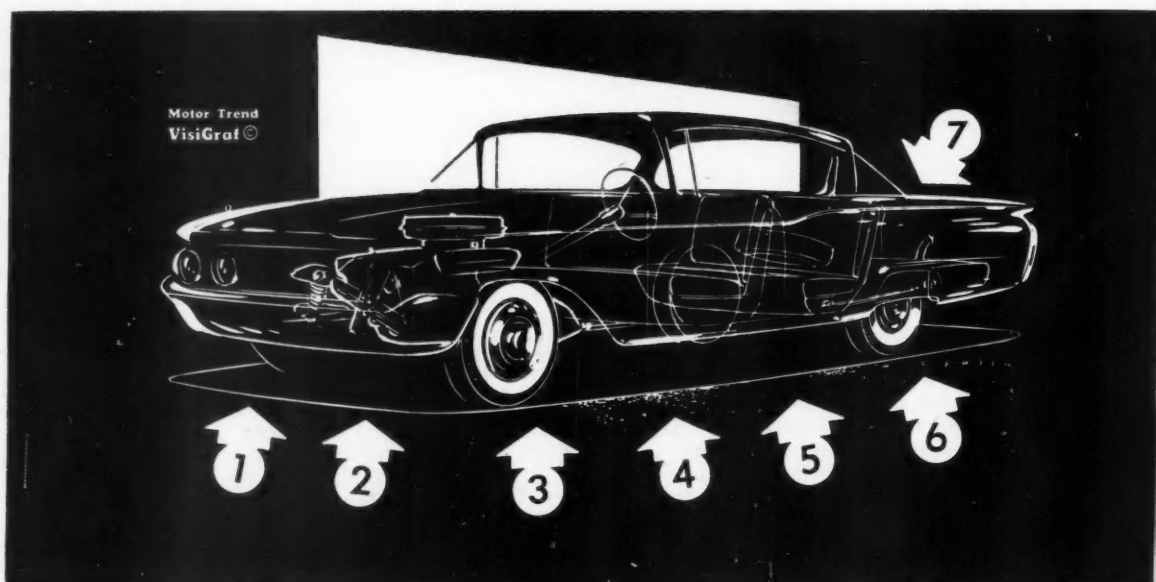
'60 Mercury Montclair

1. BRAKES Power brake option (\$43.20), a vacuum-assisted Bendix unit, eases the strain of stopping over two tons of automobile with 204 sq. ins. of effective lining area. As seen by the braking distance chart on the previous page, the riveted asbestos linings operating 11-in. cast-iron drum are hard pressed to stop the car from 60 mph, and repeated use without sufficient cooling time produces noticeable fade.

2. ENGINE, TRANSMISSION Mercury's big 430-cu.-in. V8 with 2-bbl. carburetor provides amazing fuel economy, even with automatic transmission. Naturally, with 10:1 compression ratio, premium fuel is required, but the advertised 310 hp gives easy cruising, plenty of acceleration for passing, and the ability to pass up quite a few gas stations. The Merc-O-Matic 3-speed automatic transmission, standard for the Montclair, was equipped with the Multi-Drive option

to the sides and rear, but the extreme wrap-around windshield does distort. Interior is free from internal reflections day or night, and wheel position and angle allow driving comfort for both the tall and the short.

5. SEATING, FRONT AND REAR First impression of the Mercury interior is its size. Good passenger comfort is provided by firm but well-shaped seat contours, with legroom, hiproom and headroom to spare. Armrests shorten the 60-in. seat width slightly, but they are well positioned and do not interfere with door handles or window lifts, nor do these necessary protrusions on the door catch clothing when entering or exiting. Ventilation can be adjusted to suit by windwings and windows at the expense of wind noise at speed. Heater (\$78.70 with defroster) spreads its heat quickly to the rear passenger compartment without overheating front passengers.



(\$25.50), and is great for those who like to select the gear to suit driving conditions. Engine braking or the instant acceleration of 2nd gear for curving roads is at the fingertips with a flick of the quadrant to "L" or LOW. D-2 range allows 2nd gear starting and is adequate for most traffic signal conditions. Besides, it helps conserve fuel if you don't demand jackrabbit starts in city driving.

3. FRONT SUSPENSION Independent front suspension has ball joint steering pivots and coil springs with tubular hydraulic shocks. A link-type stabilizer bar anchored with rubber bushings helps the front suspension when cornering. Power steering option (\$106.20) is a Bendix linkage booster assisting a recirculating ball and rack with an overall ratio of 31:1 and 3.7 turns lock-to-lock.

4. BEHIND THE WHEEL Mercury's hooded instrument cluster gives the feeling of cockpit control for the driver, although he is bounded by a large expanse of roomy front seat that does not crowd him when carrying that center passenger. Visibility is good ahead and

6. REAR SUSPENSION Solid rear axle and conventional differential with straddle-mounted hypoid gears are suspended by semi-elliptical longitudinal leaf springs that also take the rear axle torque. Stock rear-end gear ratio is 2.71:1, with an optional 2.91:1.

7. BODY DESIGN Semi-streamlined shapes and long-flowing lines which are the styling trends today, pose severe restrictions on designing interior room into limited wheelbases and overall lengths. Mercury, with its 126-in. wheelbase and 18¼-ft. overall length, does not have to squeeze the passengers as they make the most of the big body design while retaining a pleasing overall shape. Luggage space is just as huge with a lot of flat floor space in the most frequently used area near the rear, due to the spare mounting on the shelf over the rear axle. While it is a long reach and requires climbing into the luggage compartment to release the screw-type clamp, the need for tire changing under normal driving conditions has been so reduced that we would rather have the luggage space and work a little harder to get to the spare tire.



**Dirt, snow, ice—take 'em on
by changing treads, not your**

IRES

IF THE IDEA OF A TIRE with tread that could be snapped on and off hadn't come from a major manufacturer, we would have dismissed it as unfeasible. But Pirelli have been in the business a long time.

Thanks to Art and Joe Lerner of Five Star (distributors for Pirelli) and Piero Sierra (Pirelli representative in Los Angeles), a set of these tires were shipped fast freight from Italy, expressly for MOTOR TREND test. The test car was an Alfa Romeo Sprint.

The first part of the test was the actual drive to the snow, over 65-mph highways. The wider, flatter section and zero-degree angle of the wire cord did not detract from cornering ability, but the tires required different pressures from the stock Cinturatos. With 25 psi in each wheel, the rear end seemed a little too anxious to go a little too far out on curves, and directional stability was lacking on bumpy or windblown straights. (More about this on the trip home.)

Arriving at Frazier Mountain in the midst of a small blizzard, we took the Giulietta on a narrow up-grade covered with about one foot of soft snow. With the high-speed road tread bite was good, but near the top we found ourselves sideways.

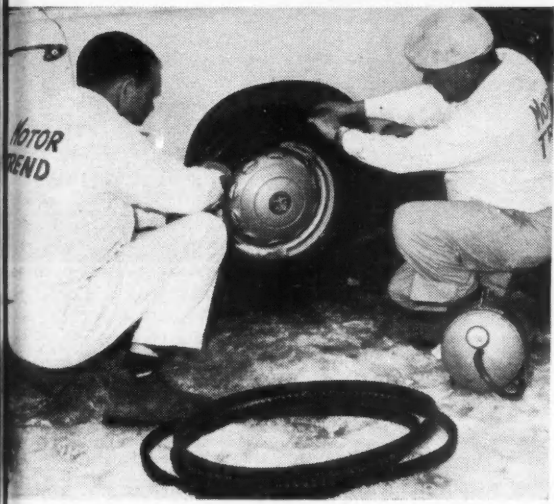
Jacking and letting the air out of the tire took more time than that required to remove and replace the bands. Gentle pressure with the thumbs collapsed the uninflated sidewall, and the road bands slipped off. The snow-treads slipped on just as easily. Safe-Ty-Air tanks, loaned to us by Newhouse Automotive, supplied ample re-inflation pressure.

With one snow-tread teamed with one road-tread, at light throttle opening the Alfa pulled the test hill with one wheel spinning. The left rear (with the snow-tread) did not spin at all. The snow that was thrown rearward came from the right wheel (*see photo*), indicating loss of traction. Adding snow-treads to the right rear too, doubled the traction and the Alfa made the grade with ease.

Before attempting the trip home, we adjusted the tire pressures to 24 psi front and 29 rear. Decidedly, when tires are changed, inflation pressures must be altered to suit individual driving habits.

Known as the Pirelli type BS3, sections can be purchased separately. The casing costs \$23, tread bands \$15, while the new tubes sell for \$4.50. MOTOR TREND was quite surprised that such a simple idea worked so well, and so easily. But the fact is, it does.

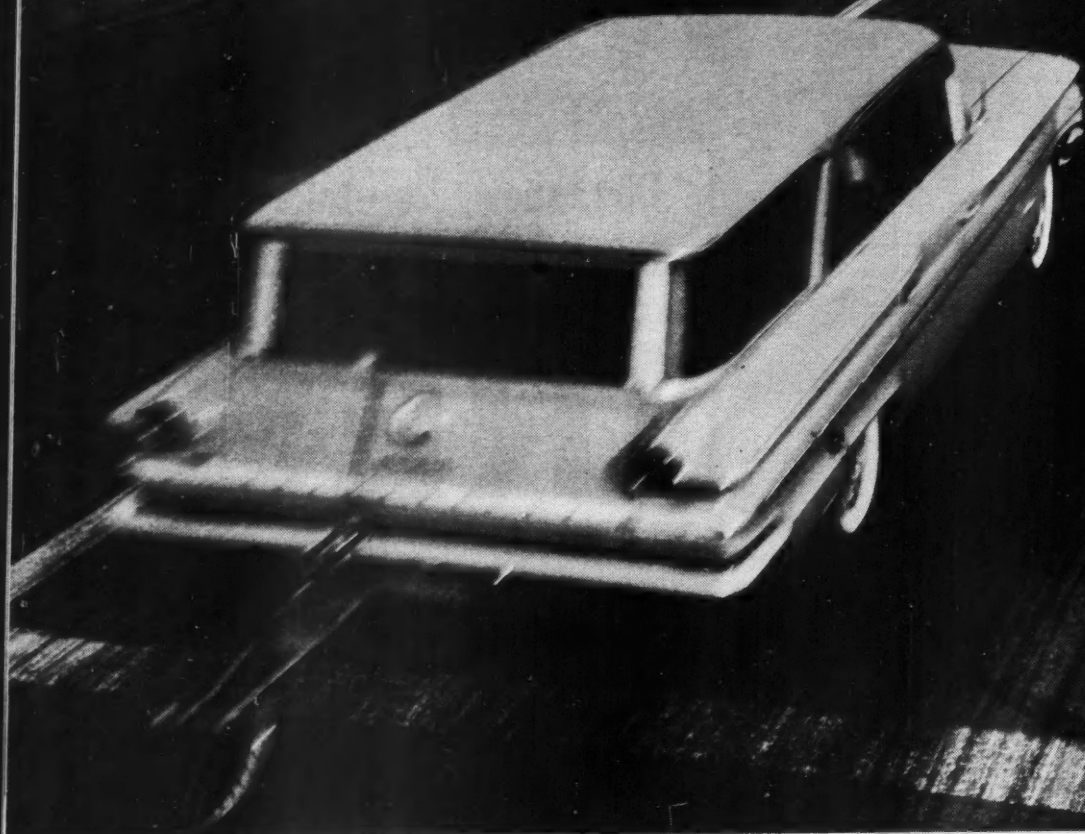
—Len Griffing



asily applied snow-tread on left rear wheel afforded good traction while regular road-tread on right wheel spun in snow.



PONTIAC ROAD TEST



Pontiac Bonneville Safari wagon—a cargo-carrying limousine

CAR AT A GLANCE

Things we like

- Large cargo space**
- Three-passenger-per-seat comfort**
- Good handling**
- Reasonable mileage**
- Power to suit load potential**
- Driving ease**
- Excellent vision and driving position**

Things we don't like

- Skimpy brake lining area**
- Restricted rear seat entrance**

THE NOMADIC WANDERINGS OF GYPSIES or the fantastic migration Westward in the days of the covered wagon are mere junkets compared to the cross-country touring habits of the American motorist. Yearly millions of Americans pack their "necessities" and their families into a car that serves as daily transportation and travel thousands of miles. Good highways to choice vacation spots shorten travel times to where a thousand-mile weekend drive is taken in stride. The one-, two-, or three-week vacationer might stretch this out to four or five thousand miles, towing a house trailer or a boat. The fantastic number of "necessities" required on a family motoring trip can soon crowd passengers out of a place to sit unless the car has the capacity of a small truck. But who wants to tour in a truck?

Somewhere there has to be a happy medium between driving and riding comfort, style and capacity, that serves the need for multiple-purpose transportation. The Pontiac Bonneville Custom Safari four-door station wagon fills these requirements well by providing ample passenger and bag-

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age space, and plenty of comfort for a long trip, yet it is styled for in-town driving to the market or the opera.

On a wheelbase of 122 inches, which is two inches shorter than the Bonneville sedan, the Safari provides six-passenger seating and still leaves nearly five feet of flat floor space in the rear with the tailgate closed. Folding the second seat and reducing the passenger seating capacity to three persons, nearly eight feet of flat floor space over five feet wide is available for luggage, merchandise, bedding down the kids, or sleeping bag comfort for adult outdoor enthusiasts.

Finish throughout is a far cry from the rather stark interiors of the station wagons of 20 years ago. Armrests, passenger car upholstery, floor rugs, chrome strips to protect against sliding luggage, thin cornerposts and large glass areas, and the low lines of modern styling conceal the truck-like virtues of the Safari.

True multi-purpose vehicles must have a wide choice of powerplants to suit the requirements of average use. It is wasteful and costly to power a car of the Safari's capacity with a high-horsepower engine if only light but bulky cargo is carried. Just as inefficient is a powerplant too small for the owner who likes camping trips, tows a boat or house trailer, or carries heavy baggage or merchandise loads. Based on the Tempest 389-cubic-inch ohv V8 engine, the Pontiac offers a choice of powerplants from 215 to 348 hp, two-barrel, four-barrel, and three two-barrel carburetors, compression ratios from 8.6 to 1 to 10.75 to 1, three-speed transmissions (both in standard and heavy-duty), and automatic four-speed transmissions, with optional rear-axle ratios most compatible to the powerplant, including a special-order 3.64 to 1 ratio for pulling heavy loads on steep grades.

Naturally, the options cost extra, but the basic standard 281-hp engine with manual three-speed transmission is a good powerplant for average use. Factory-recommended retail f.o.b. Detroit for the Bonneville Safari wagon with this engine and gearbox is \$3530. Power-assisted brakes at \$43 and power steering, \$107.50, are well worth the price and ease the stopping and steering of over two tons of automobile. As we said, the options cost extra, but not as much as expected for what you get. The Tri-Power engine—and this is the most powerful engine available—with triple two-barrel carburetors, 10.75 to 1 compression ratio and 348 hp, costs only \$89.20 extra.

Anxious to try the new Tri-Power engine, MOTOR TREND had a test car equipped with this engine, coupled to a Super Hydra-Matic four-speed transmission (\$231.34). Additional options included radio with electric antenna (\$154.57), rear speaker (\$14.15), four-way power window lifts (\$106.25), six-way power seat (\$96.84), windshield washer (\$12.37), power window in tailgate (\$31.85), tinted glass (\$43), remote control side mirror (\$11.78), and latex foam front seats (\$10.65). These are just a few of the added accessories available for personal choice or driving comfort.

With the growing demand for air conditioning systems, many of today's cars are designed to accept these units as a built-in feature if desired. The Circ-L-Aire conditioner offered for the Bonneville Safari (\$430.40) fits beautifully into the pre-designed space under the dash and gives rapid and easily controlled hot weather driving comfort.

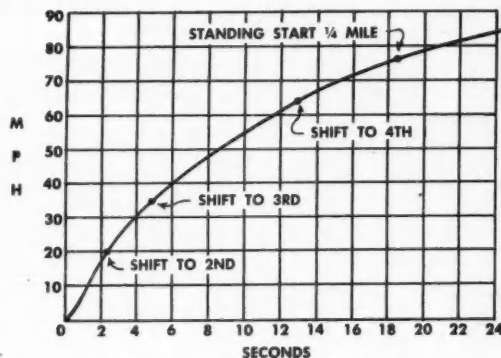
Modern station wagons are versatile vehicles. Combine this versatility with the choice of powerplants, transmissions, and rear-axle ratios offered for the Bonneville Safari, and you will find just the right combination to suit your needs.

continued on next page



Acceleration

0-45 mph 7.0 secs. 0-60 11.5
Quarter-mile 18.6 secs., 76 mph
30-50 4.7 45-60 4.5 50-80 12.9



Top Speed

Comfortable cruising From 50 to 90 mph
Maximum speed 110-120 mph

Stopping Distance

From 60 mph to standstill 216 ft.
(In 4.7 secs. with maximum of 0.82-G deceleration)

Stop after maximum acceleration to end of 1/4-mile 314 ft.
(In 5.8 secs. with maximum of 0.82-G deceleration)

Gas Mileage

	Mpg	Mph
Over-the-road averages		
Freeways, open highway,		
some small towns	14.2	50.7
High-speed, open 2-lane,		
4-lane highway	12.6	59.2
2-lane open highway, no traffic	13.2	66.4
2-lane, 4-lane freeway, average traffic	14.7	55.6
2-lane, 4-lane average highway	14.9	49.8
Overall average for 776 miles	13.9	56.3
City driving	10.8	—
Constant speed, level road fuel checks	17.9	30
	17.3	45
	16.1	60

by Charles Nerpel, Technical Editor

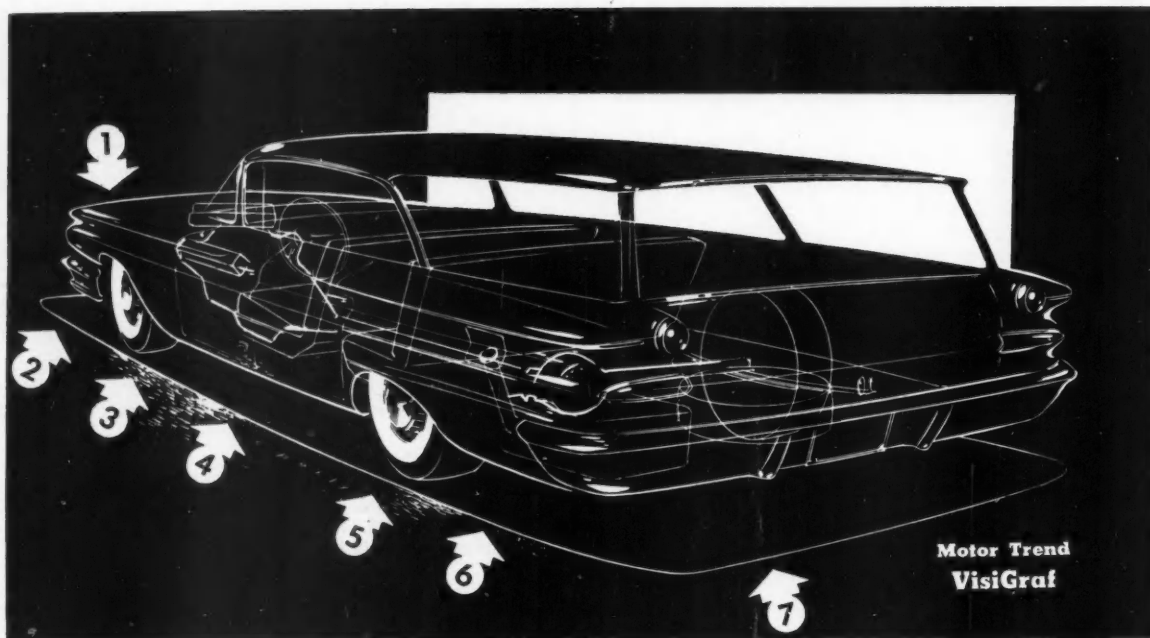
'60 Pontiac Bonneville

1. ENGINE, TRANSMISSION Test-car engine was Tri-Power option, 389-cu.-in. ohv V8 with 3 2-bbl. carburetors and 10.75:1 compression ratio. Advertised horsepower is 348, and premium fuel is required. Engine is smooth and powerful and makes a nice combination with 4-speed Hydra-Matic transmission. Fingertip control to intermediate gear for downhill engine braking and winding road acceleration is a nice feature, especially handy for saving brakes when hauling maximum loads.

2. FRONT SUSPENSION Ball-joint independent front suspension with inner ends of upper control arms pivoting on threaded bushings is suspended on coil springs and snubbed with Delco double-acting tubular shocks. Wide track, 64 ins., is still a desirable feature that

wide and stay open even when the car is tilted, yet they close with little effort for their size. A fingertip latch holds second seat against rattle-proof rubber bumpers, yet allows easy conversion to full cargo capacity. Access to rear seat is restricted somewhat by seat itself filling most of the available opening.

5. BRAKES Riveted molded asbestos brake shoes with 11-inch drums provide 173.7 sq. ins. of effective area with which to stop a car capable of being loaded to a curb weight of nearly 3 tons. Braking tests from 60 mph and from maximum speed at the end of 1/4-mile were made with only 2 persons aboard and, as seen on the chart, were about average for unladen passenger cars. Prolonged use of brakes of such small surface area with heavy loads provokes rapid fade and high



adds stability to ride and control. Recirculating ball-bearing Saginaw steering, power-assisted, has overall ratio of 22:1 and a steering-wheel ratio of 4.6 turns lock-to-lock. Steering is smooth and car tracks well with little steering correction, even on cambered roads.

3. BEHIND THE WHEEL Wheel location and angle and the excellent seat position selectivity provided by the 6-way power adjustment give the driver the feeling of being a part of the control section of the car. Instrumentation is in an easy-to-read cluster that does not reflect or glare. Double compound windshield is optically good with no distortion at the sides. A turn of the head gives a clear picture of traffic conditions at either side and the inside mirror takes in a good angle of view through the tailgate window. Side mirrors are recommended if you load the interior enough to block the rear window.

4. SEATING, FRONT AND REAR Great width of both passenger seats gives them real three-passenger comfort. Lowered driveline tunnel provides center passenger with more seat padding and legroom without setting him up higher and reducing headroom. Doors open

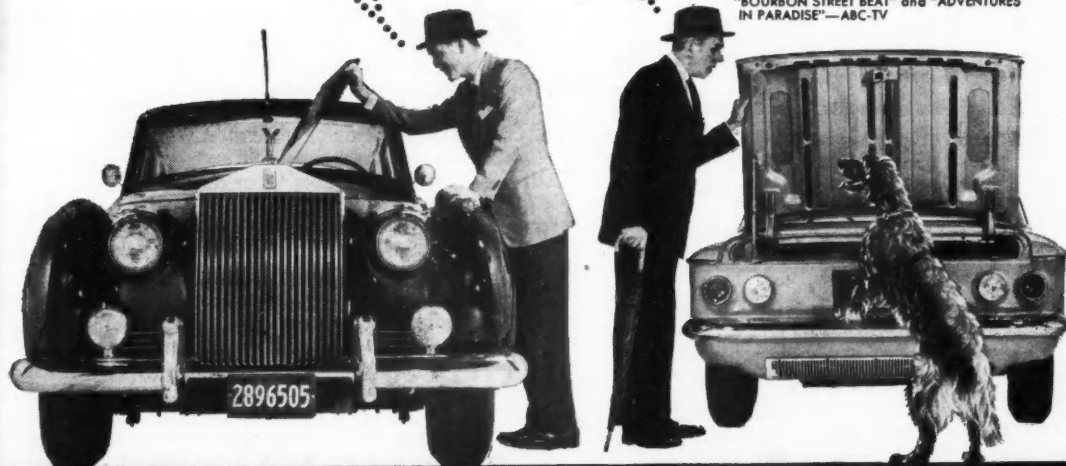
wear. Power-brake assist requires only slight pressure for maximum braking effort but the effective area is skimpy for the vehicle's weight.

6. REAR SUSPENSION Conventional live axle with hypoid differential and a stock rear-end ratio of 3.23:1. Options of 3.08:1, 3.42:1, 2.69:1, and special-order 3.64:1 ratios are available. Pivoted control arms register axle and take torque loads, and coil springs and tubular hydraulic shocks provide springing. Rear track is as wide as the front, 64 ins., putting the wheels well out toward the outer limits of the body. The coil springs are heavy enough to support nominal loads but they should be helped by overload springs if heavy loading is the rule.

7. BODY DESIGN Body work and fit on doors, hood and tailgate are the result of rigid production quality control that typifies most of the Pontiac line of new cars. The test car has been run over 3000 miles, on desert roads, race courses, and high-speed cross-country roads and is still rattle-free both in the body and the chassis. Cargo space is large enough for any normal hauling and a tailgate, rugged enough to withstand driving while open, increases inside floor length 27 ins.

Two great cars . . .
and a single thought

*What do you know?
An aluminum engine
just like mine!*



The 1960 Rolls-Royce and a new compact U. S. car represent two extremely different approaches in automobiles. The differences in design, in size, in motoring features, in price—are great.

Yet both of these cars are powered by aluminum engines.

This fact proves that automobile experts agree that the greatest enemy to efficiency is excess weight. And they fight this enemy with aluminum, which weighs only one-third as much as cast iron or steel. By reducing dead weight with aluminum, they improve efficiency. Thus they improve performance and economy and safety.

And very soon now, you will be seeing other aluminum engines—some in front, some in rear, some air-cooled, some liquid-cooled, depending on the needs of each particular model design.

And there will be other new uses of aluminum to help reduce weight and increase value.

As the leading supplier of aluminum for automobiles, and as the major supplier of aluminum for America's first mass-produced aluminum automobile engine, we are proud to be working with the pioneers who are contributing so much to automotive progress.
*Reynolds Metals Company,
Richmond 18, Virginia.*

Watch Reynolds TV shows—"ALL STAR GOLF"
"BOURBON STREET BEAT" and "ADVENTURES
IN PARADISE"—ABC-TV

REYNOLDS  ALUMINUM



DODGE ROAD TEST

High-performance Polara retains Dodge rugged reliability

CAR AT A GLANCE

Things we like

Smooth, rapid acceleration
Good brakes
Reasonable fuel mileage for hp
Solid construction
Driver and passenger comfort
Good luggage space

Things we don't like

Poor installation of trim
Wide cracks around doors
Long rear overhang

RUGGEDNESS, the ability to stand the wear and tear of everyday use, has become a big factor in the public appraisal of a product they are preparing to buy. Most of our early automobiles were extremely rugged—they had to be just to withstand the vibration of their huge solid-mounted engines, poor springing, hard tires, and pavement comprised of a series of chuckholes laid end-to-end. Among the most rugged of these pioneering motor vehicles was the Dodge. Some of these cars of World War I vintage were still running strong in the era before World War II.

While highways and tires have improved, the fantastic growth of the American motor car is due largely to its dependability, nationwide service facilities and ease of operation, but ruggedness is still a big factor. Today we have more interior space in which to carry heavier passenger loads, speeds are higher, bumps are lower but we hit them faster and we travel a great deal farther per year than we did 25 years ago.

The Dodge Polara four-door hardtop tested by MOTOR TREND was equipped with the 500-D engine package, which

is the ram-induction-tuned version of the 383-cubic-inch ohv V8. This is a lot of powerplant, but the Polara unit body/frame construction is plenty rugged and stands up well under the performance capabilities of this engine. Standard engine usually furnished with this car is the same displacement and compression ratio (10 to 1) as the ram-tuned option and can be coupled to a three-speed manual transmission with a choice of 3.54 to 1 or 3.31 to 1 rear-axle ratios. Basic price of the Polara so equipped has a factory-recommended tag of \$3280. Automatic three-speed TorqueFlite transmission will cost an extra \$210.70 with a choice of either 2.93 to 1 or 3.31 to 1 rear-axle ratio. We thought it best to bring out these details to avoid confusion and point out the terrific bargain of the 500-D package at \$395.20, which includes the TorqueFlite automatic, the only transmission available with the ram-tuned manifold. Rear-end gear ratio is standard 3.31 to 1 and optional 2.93 to 1. There are no complaints with the handling of the Polara, and the Sure-Grip differential at \$49.70 makes good use of the power available at the rear wheels.

Highway touring in a car with such power is quiet, effortless and exhilarating, especially with the extra margin of passing acceleration even at high cruising speeds. Wind noise is not excessive, but gaps around the doors steer annoying drafts on feet and ankles even with the windows closed. This was a strange thing about this test car. The body was stiff and rugged. No rattles developed, and the doors opened and closed well but they did not fit. Similar discrepancies were apparent in most of the chrome strips and the stainless steel binding around windshield and rear window. They were poorly applied and did not fit well. Tighter production quality control is clearly indicated.

Horsepower and economy do not exactly go hand-in-hand when pulling large passenger vehicles at high speed. The Dodge Polara requires premium fuel but at normal cruising speeds does not gulp the gas one would expect. At steady speeds with our 1/10-gallon fuel-test bottle, we were able to stretch a lot of distance out of that little container, but anyone who drives a car with such power potential is certainly not going to miss the thrill of having so much acceleration under the throttle foot.

The MOTOR TREND staffers who drove this car could not resist the go . . . go . . . go temptation either. We took the car over into the straight flat stretches of Nevada highway for the really fast road cruising, knowing full well we could easily stir up a citation under California's newly enforced 65-mph limit. One 200-mile stretch of this road had practically no traffic, only slight grades, and nothing but barely detectable curves, providing a chance to check stability, comfort, driving ease and mileage at cruising speeds in the 85-to-90-mph range. Under these conditions the car tracked very well, noise level was so low that the speeds were hard to judge by sound alone, and fuel consumption was just a shade under 14 mpg.

In the mountains there is sufficient power to get about the same mileage as in fast highway cruising, but the shift-down braking and acceleration advantages of driving such roads with the transmission button in D-2 will cut fuel mileage if such a driving technique is followed.

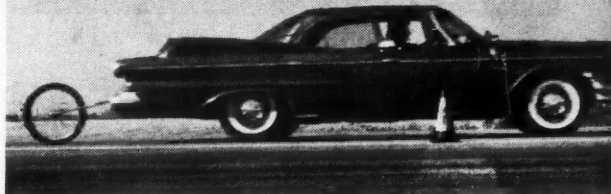
Unseen suspension changes improve steering and handling over last year's model with some softening of the feel of the road through the power steering system, whose lively 3.5 turns lock-to-lock ratio has been retained.

We like the Dodge Polara with its 500-D package and solid construction, and hope that stepped-up quality control will smooth up some of the raw edges we saw on the first-off models. It's a hard car to beat in its class.

continued

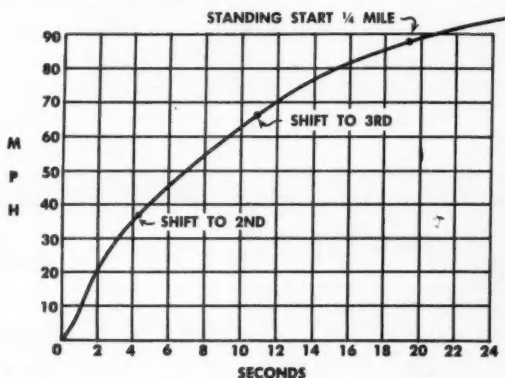
MT

'60 DODGE POLARA ROAD TEST



Acceleration

0-45 mph 6.0 secs. 0-60 9.3
Quarter-mile 19.1 secs., 88 mph
30-50 3.5 45-60 3.3 50-80 8.9



Top Speed

Comfortable cruising From 50 to 90 mph
Maximum speed 110-115 mph

Stopping Distance

From 60 mph to standstill 180 ft.
(In 4.3 secs. with maximum of 0.74-G deceleration)
Stop after maximum acceleration to end of 1/4-mile 362 ft.
(In 5.8 secs. with maximum of 0.69-G deceleration)

Gas Mileage

Over-the-road averages	Mpg	Mph
2-lane, 4-lane level desert highway	13.9	79.8
2-lane, 4-lane average highway	15.1	59.0
2-lane highway, medium traffic	15.3	42.4
4-lane freeway, average traffic	14.2	41.4
2-lane mountain roads	13.4	42.0
Overall average for 670 miles	14.3	52.9
City driving	12.8	—
Constant speed, level road fuel checks	18.2	30
	18.0	45
	17.6	60

'60 Dodge Polara

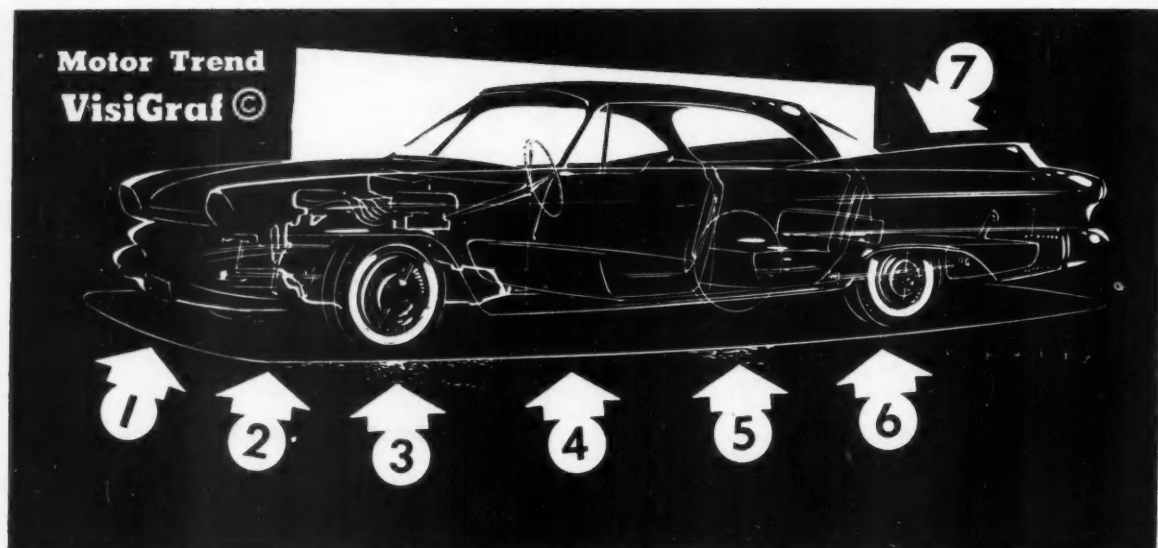
1. BRAKES Total-contact drum hydraulics, identical front and rear, have bonded linings. Effective lining area is 230 sq. ins., pretty fair for 2-ton car. Single-stop deceleration is excellent (60-0 mph in 4.3 secs. in 180 ft.). Repeated stopping results in fade, since 11-in. cast-iron drums are pretty snug inside 14-in. wheels shielded by 8-in.-wide tires. Power brake pedal has only 4.6 ins. travel (6 ins. non-power); but since leg effort is doubled by engine vacuum, it does not have to be depressed very far.

2. ENGINE, TRANSMISSION The big (same as DeSoto) ram-induction 383-cu.-in. engine and 3-speed TorqueFlite transmission make a pretty potent package. It seems a shame to run the car at anything under 100 mph (indicated 120). The cubic inches give strong low-end torque, tuned intake provides a surging mid-range for passing, and the high-speed cam peaks 340 hp around 100 mph! The close ratio (1.43:1) kickdown gear gives plenty of punch and plenty of speed for close-distance passing at moderate rpm.

similar type. Generally, everything is well at hand for comfortable and very pleasant driving in town or on the highway.

5. SEATING, FRONT AND REAR Seats are set quite close to floor level, giving a feel of being part of the car, comfortable under moderate lean of hard cornering. Vision is helped by wheel shape. The full-power seat is a worthwhile option if there is more than one driver. Front hip- and legroom are spacious, effect of tunnel hump is negligible. Swivel seats (\$87.15) are a help for women entering and especially exiting, but men tend not to bother using them. Rear seat of the 4-door has enough room for 3. Entry and exit are fair through low doors.

6. REAR SUSPENSION Semi-elliptical springs are mounted well out, highly unsymmetrical to reduce acceleration squat. End result is a good ride with enough stiffness to keep car reasonably flat under most conditions. Springs do not bottom easily, though huge body



3. FRONT SUSPENSION Independent, with unequal, non-parallel arms supported by torsion bars, dampened by direct-acting shocks, stabilizer bar. There is a combination of comfortable ride and seemingly unlimited cornering ability, especially on sweepers where long wheelbase is not a liability (as in tight turns). On long, undulating straights we did notice a tendency for the front end to become unweighted in excess of true 100 mph, but directional stability is excellent. With power steering, ratio is reduced so that little wheel movement causes a lot of turning. It's an effort-saver, but wheel feel is that it is being detached from the car.

4. BEHIND THE WHEEL The feeling must be akin to piloting a space ship, with a complex-looking panel disguising a few simple instruments and controls. The out-of-round steering wheel is very comfortable, gives legroom under it and vision over it. Whatever is lacking can be made up by jacking up the 6-way power seat (\$95.65). Wrap-around windshield is as distortion-free as any

overhang frequently drags curb. Unfortunately, springs must take huge (460 lbs.-ft.) torque, suffer from torque reaction. At end of 1/4-mile acceleration, for example, rear fenders were still tilted though Sure-Grip differential (another worthwhile option) reduced wheelspin on unloaded wheel.

7. BODY DESIGN A combination of fast lines and sturdiness is the overall styling motif, though there is certainly room to question the reason for such big fins. They loom quite prominently in the rear-view mirror. This year's unit construction adds a torsional stiffness older models didn't have (actually, chassis and body used to be quite flexible in turns). Also, there is the feeling of oneness—that the car is one piece. Unfortunately, the workmanship of the assemblers must have been void of pride. Fenders did not line up, and doors suffered from "gaposis." Even trim was not aligned, and many pieces were loose. A shame to detract from a well-designed, excellent-handling, high-speed go-er by shoddiness.

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Karting

continued from page 40

memento by members of the worldwide Go Kart Club of America in recognition of his important role as developer of the original kart.

For many years Art worked at the famed Kurtis-Kraft plant in Glendale, Calif., where Indianapolis cars, sprint cars, full-size midgets, as well as half- and quarter-midgets, were being turned out in a dazzling array. For seven years Art saw such cars go from drawing board to reality under his capable workmanship, sadly bemoaning the fact that with spiraling material and production costs, fewer and fewer racing enthusiasts could afford an out-and-out thoroughbred race machine.

The wee-sized quarter-midgets which rocketed to popularity several years ago did their share in satisfying much of the nation's racing urge—one could be purchased at 1/20th the cost of a full-bred machine. Fans who disliked the high cost of a track ducat at state fair races could come and sit in the little stands and enjoy the thrills and spills of racing for far less than the cost of parking space alone at, say, Indianapolis. Though Junior did the actual piloting, it was Dad who was getting the kicks of racing by modifying and altering the little hustlers at home, tuning and maintaining in the pits, and subconsciously handling the machine in races. Few are the fathers of quarter-midget drivers who don't grasp in their hands an imaginary steering wheel and lean into the turns and grimace as Junior thunders around a 1/20th-mile oval.

What was sorely needed to get auto racing back on its own two feet, Art felt, was a low-priced, high-spirited, adult-size racing car that would permit Dad to get out on the track. The little quarters served their purpose admirably, giving Dad and Junior a "togetherness" relationship and providing a vent for Dad's automotive emotions; but once a race was underway Dad could only imagine himself at the wheel, for the physical size of the stormers prevented him from competing on his own.

Without a thought toward actual size, Art, in 1956, added up the more expensive components in a race car. Suspension systems were tricky to research and design, the parts were expensive to construct and assemble, and constant maintenance was required. The solution, then—do away with suspension altogether. By the same token, bodies of either fiberglass or metal were expensive to produce and there was

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always the high cost of repair in case of a hassle with a rubber course marker or a hay bale. As with the suspension, Art mentally discarded the body. What remained were the engine, the chassis, and the steering.

Art planned further. The smaller the size of the car, the less power needed to propel it, and the simpler the chassis layout and construction. Art sat in a quarter-midget chassis and found that despite his 210 pounds he was reasonably comfortable in the seat and, even with arms and legs grotesquely akimbo, he could manipulate the pedals and steering wheel.

The wheelbase and tread of a quarter, then, would suffice for his tiny dream car. The chassis, if constructed of highest-quality steel, need be nothing more than a simple rectangle with fore and aft crossmembers doubling as axles. In Art's mind, then, the kart was basically developed—all that was lacking was the source of power, and that was to prove a real stickler.

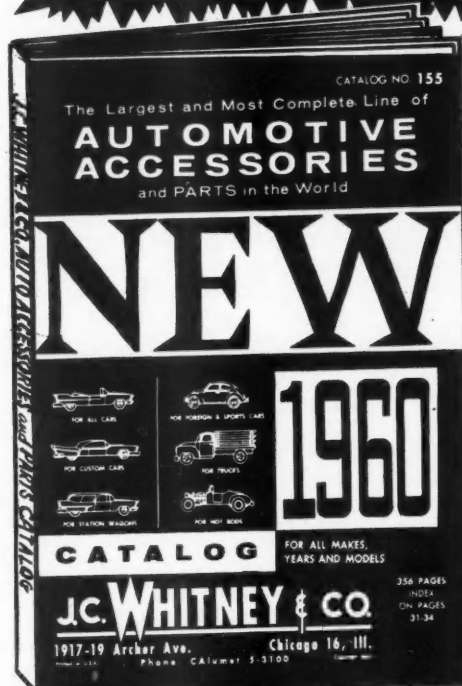
Four-stroke engines are bulky and on the heavy side for the power they produce; moreover, there is the need for a cooling system. Even single-cylinder four-strokers didn't seem to be the answer. The kart was to be a one-gear machine, eliminating the need for a hand- or foot-operated clutch. It would require an engine that could give both quick acceleration and a reasonably high top speed. The two-stroke engines seemed to offer a solution, but even those used on chainsaws carried a steep price tag. Art felt the car could be built for well under \$100, so the engine should carry a similarly low price tag.

Up to this point Art hadn't turned a wrench or even sketched a drawing of the car that was destined to bring both competitive racing and all-family driving pleasure to countless thousands of prospective owners/drivers. He didn't need to. The engineering, construction and capabilities of the first kart were as good as blueprinted in Art's mind, but he couldn't seem to imagine the machine with an engine installed.

As though guided by some intuitive urge, Art one day wandered into a surplus store. On a counter were piled several one-cylinder, aircooled, two-stroke engines that would produce, so the tag said, about 2½ hp. The price was \$19.95. Art hefted one of the powerplants and guessed its weight at a little over 10 pounds. Quickly calculating the weight of his imaginary car, he added his own weight and then divided by the rated output of the tiny engine he held in his hands. The power/weight ratio was disheartening. What kind of

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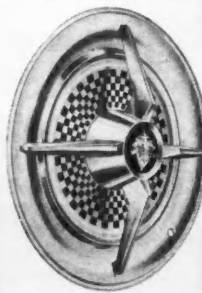
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performance could be expected from a car which must propel over 120 pounds with each hp? Even the flyweight quarter-midgits with youngsters aboard halved this ratio and even then couldn't deliver performance enough to produce both good acceleration and high top speed. One factor had to be given up in favor of the other.

Art turned the engine over and over in his hands, shrugged his shoulders and thrust a \$20 bill into a clerk's hands.

It didn't take long for the kart to materialize. High-strength, thin-walled, small-diameter chrome moly tubing was cut for siderails and axles. When welded into a rectangle, they represented the finished chassis. Without a cowl to support the steering shaft, some sort of bracing was needed. Chrome moly was bent into a U shape and united to the siderails. A second U completed the seat backrest. Sheet metal secured to the backrest and the siderails prevented legs and posterior from falling through to the ground scant inches below. Wheelbarrow wheels were slid onto bolts welded to the ends of each axle. A steering wheel was fashioned and joined to a length of bar that was slid through brackets on the forward U-shaped support and the front axle. Tie rods were run directly from the lower end of the steering shaft to the simple front axle steering knuckles. And the car was complete—except for the engine.

Art held the engine in various attitudes at different places on the car. But the simplest means of coupling the powerplant to one wheel seemed to be by chain. The engine wound up being secured directly to the rear axle with its output shaft parallel to the axle and extending to one of the rear wheels. By welding a large sprocket to the wheel, securing a smaller sprocket to the engine shaft and joining the two with a length of bicycle chain, Art's first kart was completed and ready for the road.

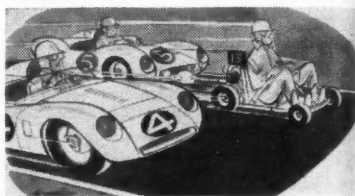
The car had yet to run under its own power. That had to wait until the following weekend when a nearby school parking lot would be empty of cars. This established the pattern that literally thousands would soon be following: Wait anxiously 'til Sunday rolled around, load the kart into the trunk of the family car, head for the nearest parking area, stop on the way and fill a one-gallon can with a mixture of gas and oil, unload the kart and start up its tiny engine.

Art's car surprised even him and, he admits now, half scared the wits out of him despite his years-long background of

automobile, motorcycle and boat racing. Its maneuverability required a sensitive hand on the wheel since a too-quick turn could unseat the driver. Acceleration and top speed were not at all like a potent sprint car, but sitting just inches above the pavement, without a surrounding body envelope, on a car four feet long and two high while traveling at 35 mph, is enough for anybody.

A curious bystander asked about the machine, was given a ride, and Art found himself with an order. A week later there were two karts—the happy first customer evoking more questions from the curious the following Sunday even as Art took an order for a third machine. The three grew to four, then six—all the machines identical in every respect. Within a month of the first kart's birth, the world was awakening to the now-familiar buzz of the storming karts—and the surplus industry began to wonder where in the world all the engines were going!

It remained for a surplus dealer who saw Art's first kart to bring its commercial possibilities to a pair of longtime hot rodders then engaged in the muffler business. The trio built their own kart—or, rather, three karts.



With Art's six karts and the addition of three more, the machines drew the attention of an automotive magazine which reported "the things" to its readers as a curiosity among the day's hot rods and customs. That uncorked the dike.

Today, it is reported, there are somewhere near 300 manufacturers busily building their versions of Art's original kart. The supply is being eagerly snapped up by a seemingly endless group of enthusiasts who want to get out of the stands and onto the track.

Art Ingels, it might be expected, is now among the manufacturers of karts. Together with partner Lou Borelli, Art is busily engaged in producing his line of Carettas—not on a high-production basis but along custom-built lines, much as GP Ferraris are turned out. By far the majority of Carettas delivered go to customers who refuse to settle for anything less than highest quality and workmanship in their one-of-a-kind machines. And this, Art—the Father of the Karting Sport—provides capably.

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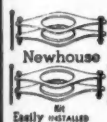


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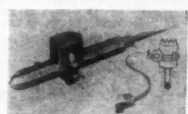
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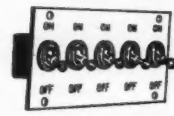
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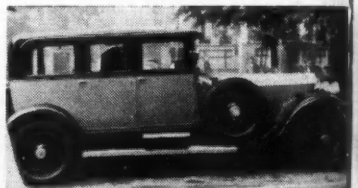
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'34 CHRYSLER Airflow 4-dr. sed. Stored many yrs. Body, engine, radiator, battery good. Needs paint, 2 tires, 2 window glasses, interior & chrome work. \$350. G. C. Blunk, 605 Williams Blvd., Springfield, Ill. Phone Kingswood 4-4501.
'23 ROLLS-ROYCE 6-pass. sed. Good orig. cond.—Engine No. R202-N375. \$3000, f.o.b. Holland, N.Y.



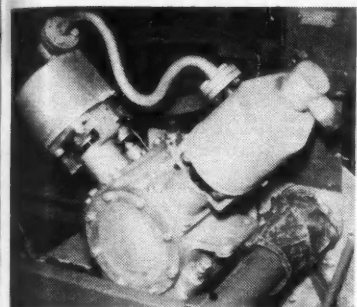
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RESTORERS' GUIDE—antique & classic car service, supply directory. Lists suppliers of cars, parts, tires, books, services; clubs, museums, publications. 1960 edition \$2 postpaid. R. B. Brigham, the Motormart, Frankton, Ind.

AUTOMOBILE LITERATURE—old, new & foreign; glossy photos, shop manuals, dealer books; free motor magazines. Auto Maniacs of America, Stockbridge, Mich.

'48 LINCOLN CONTINENTAL htdp. Showroom cond.—orig. uph. & black finish; 34,000 mi. \$2500 or make offer. Carl S. Myers, 689 Kenne-saw Dr., Smyrna, Ga. Phone HE 5-0416.

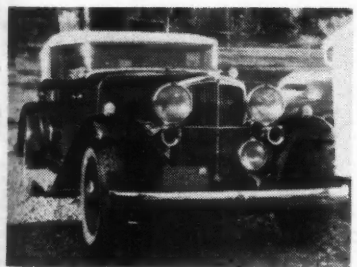
'49 CADILLAC conv. Exc. body, chrome, interior. Engine solid but needs rings, valves. \$300. Harold M. Teeple, P.O. Box 19, Green Cove Springs, Fla.

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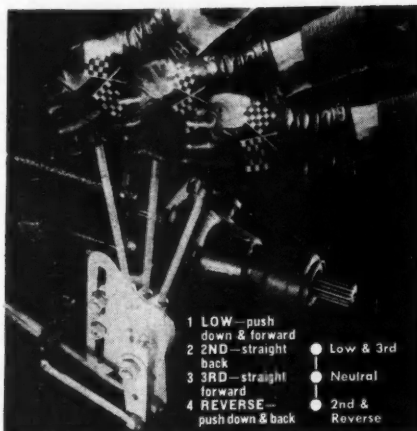
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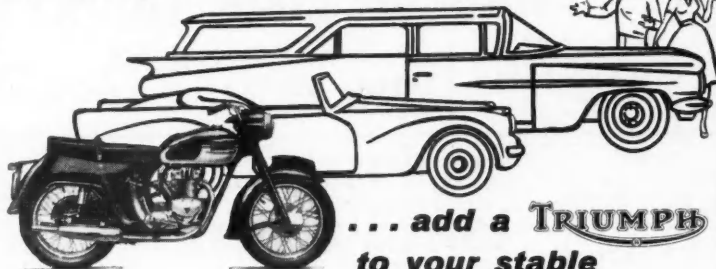
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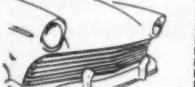
1959 FORD



1958 FORD &
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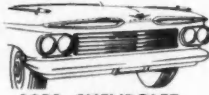
1957 FORD



55-56 FORD



1952 FORD



1959 CHEVROLET



1958 CHEVROLET



1957 CHEVROLET



1956 CHEVROLET

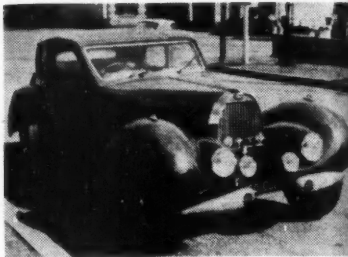


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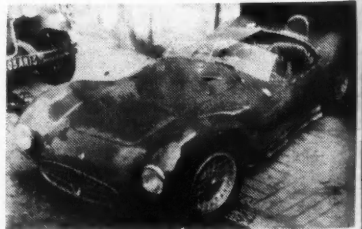
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'38 HUDSON 112 4-dr. sed. Exc. orig. cond. 45,600 mi.; drive anywhere. 1 owner—have all orig. papers, etc. \$400 or best offer. L. C. Jackson, Box 174, Broken Arrow, Okla.
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where in U.S.—\$2200. William A. Buttlar, 14 Imrie St., Randolph, Mass. Phone Woodlawn 3-0388.
'36 FORD phaeton. New top & uph., radio, w.w.s. Strictly stock thruout; exc. cond. \$660. Douglas Hanson, 917 Kingston Rd., Baltimore 12, Md.
'40 LA SALLE conv. Exc. body, mech. perl. Beautiful metallic blue paint, fair top, orig. boot & h. \$1000. R. A. Hall, 5619 N. Commercial Ave., Portland 17, Ore.
'53 ROLLS-ROYCE Silver Wraith Hooper touring limousine. Showroom cond.; 24,000 orig. mi. Automatic transmission, air conditioned, 2 radior, Oriental rug, bar, tables, sunroof. \$8500. Robert T. Hess, R.F.D. 3, Box 107, Flemington, N.J.
GOLD DIGGER custom ski boat. Stock '57 Chrysler 300-C engine. Star Marine 4-X-E transmission. Clocks 67.71 in 1/4-mi. Sportscar handling. \$5000 for boat & trailer. Reid Nisson, 4111 College Crest Dr., Los Angeles 65. Phone Clinton 7-8996.
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'34 PACKARD V-12 conv. victoria, with rare Rollston alum. body. Recent valve, generator o'haul. Good cond. \$1500, incl. parts car (also '34 V-12). Alfred E. Fletcher, 70 Central Ave., Apt. 24, New Haven, Conn.
'40 MERCEDES-BENZ 7.7-liter supercharged open touring. Tubular frame, de Dion rear, coil & magneto ignition systems. 153 1/2-in. wheelbase. 5 speeds forward, gun lockers. \$3500. Alfred E. Fletcher, 70 Central Ave., Apt. 24, New Haven, Conn.
'36 FORD phaeton, restored to mint. \$1500. Donald T. Clouser, Box 266, Shiremanstown, Cumb. Co., Pa. Phone Harrisburg, Pa.—REgent 7-2371.
'29 MODEL A Snow-mobile. Engine rebuilt, extra tires—all there. \$500. Write for details. Philip Tschopp, 44 Center St., Gowanda, N.Y.
'36 CORD 5-pass. phaeton. All stock; mech. perl. Body sound—no rust or rot. Needs paint, top, some uph. & rechroming. \$1150. Richard Smith, 149 Norwood Ave., rear, Long Branch, N. J. Phone Capital 2-6647.
'38 CADILLAC V-16 touring sed. Mech. perl.; driven daily. No rust, but body needs restoration. Many spare parts—transmission, etc. \$800. W. H. Byington, 406 W. 38th St., Chantanooga 10, Tenn.
'55 MASERATI 2-liter Mille Miglia. Double ignition, 3 carbs, Pirelli racing tires. Red, beige



leather interior; road-equipped. Splendid cond. \$3000 f.o.b. Marseilles, France. J. L. Du Montant, Fougolles par Eymoutiers, Hte. Vienne, France.

31 ROLLS-ROYCE Phantom I Brewster-body car. Long-hood model, removable top over front. Body & interior in very good orig. cond.; engine good. \$1500. Alfred E. Fletcher, 70 Central Ave., Apt. 24, New Haven, Conn.

32 CHEVROLET touring sed. Reupholstered; everything else orig. Mech. perf. & runs good. No top. \$1150. Jim Talbott, 7746 McKinley St., San Bernardino, Calif. Phone GL 8-3696.

33 MERCEDES-BENZ 500-K cpe.; left-hand drive. No knocks, but babbitt found in oil filter; 15 lbs. oil pressure at 60. \$1500 cash as is. Leo E. Guszak, 2430 Prescott, Corpus Christi, Tex.

34 AUBURN Speedster. New paint, tires, chrome, top, etc. Completely o'hauled. Only 14,732 actual mi.; in storage since '37. \$2200. May be seen at 19020 S. Figueroa St., Gardena, Calif. J. O. Schafer, 4243 Fleethaven Rd., Lakewood, Calif.

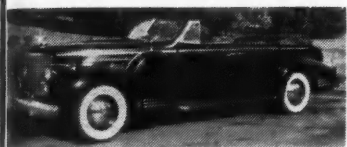
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55 BUICK Skylark. Full power, leather upholstery top & tires, Continental kit, wire wheels, etc. \$1000 or swap for Corvette of equal value. Don B. Davis, 131 Tyler Ave., Cuyahoga Falls, Ohio.

58 CADILLAC V-16 conv. sed. 3-position conv. top, sidemounts, new tires. National prize winner.



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68 LINCOLN CONTINENTAL htdp. in good road. Mercury engine. Will trade up or down for Rolls-Royce, Facel Vega, Karmann-Ghia, or what have you? A. A. Hamilton, 104 First Ave. West, Hendersonville, N.C.

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31 MODEL A rdstr. within 400-mi. radius of Boston. Please state details, cond. & price. All offers answered. W. G. Holt, Sunset Dr., Raynham, Mass.

32 FORD touring or phaeton, preferably in unimpaired cond. & in Western states. Bill Desefani, 708 Doran Dr., Bakersfield, Calif. Phone FAir-4-3894.

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NEW FORD PARTS—'28 to '40—for '36 Ford owner. 2-piece windshield frame, fenders, boards, chrome, etc. Send list. Gus Garton, 5th & Vine St., Millville, N.J.

LITERATURE on '36 Buick, '40 Packard 110, '40 Willys, '58 Packard, G. C. Blunk, 605 Wilshire Blvd., Springfield, Ill. Phone Kingwood 44503.

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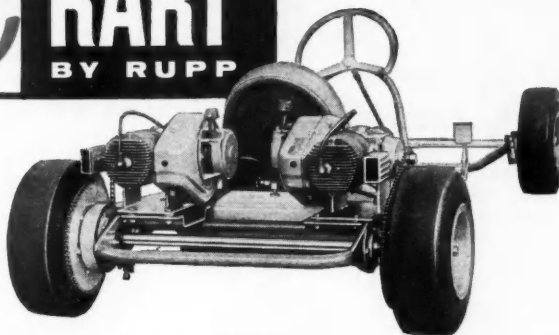
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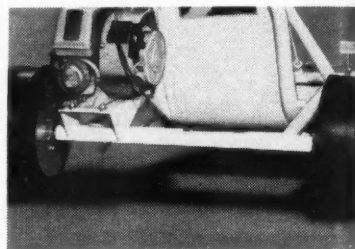
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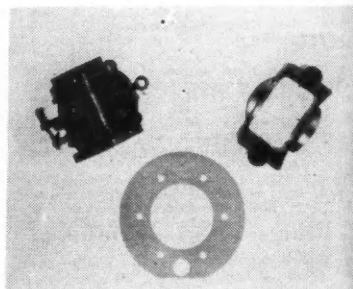
A LIVE AXLE with tapered roller bearings is offered to power both rear wheels when turning—quite helpful in hot turns on a sportscar-type course with hard lefts and rights. Made by the makers of Thunderbug karts, who offer six engine options and the live axle. For information, contact Thunderbug, Schmarje Tool Co., Muscatine, Iowa.



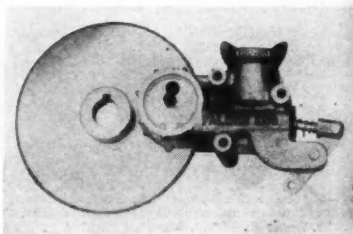
HEADERS for Clinton A-400 and A-490, and West Bend two-stroke engines are offered to replace the stock muffler or stack. For Clintons, flared-end header is cast aluminum, buffed to high luster with clearance for all centrifugal clutch drives. Musket-flared design for West Bend is same material and finish. Both add to appearance and make the little engines roar. \$9.95 each from Steen's, 19 E. Valley Blvd., Alhambra, Calif.



THREE ITEMS from one manufacturer are a thin aluminum gasket to increase compression ratio, same as milling head (95¢); McCulloch or Tilliston diaphragm-type carbs, reworked, with enlarged venturi and jets to increase rpm by 20 per cent (\$15 exchange); and an aluminum stuffing block for crankcase of McCulloch or West Bend engine to increase effective compression ratio (\$4.95). Order from Flexo Products, 5180 Venice Blvd., Los Angeles 19.



SPOT BRAKES for karts, 1/4 and 1/2 mid-gets is caliper-type, one-unit, self-contained, in light alloy; includes master and wheel cylinder, has 10 to 1 ratio. The Palmi comes complete, ready to install at \$29.50. Send 50¢ for catalog to Palmi Engineering, 3156 N. San Gabriel Blvd., S. San Gabriel, Calif.

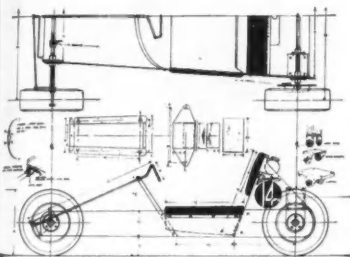




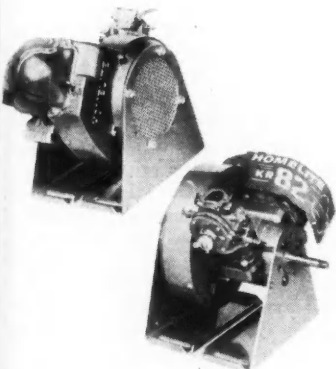
THERE'S NO USE trying to stuff it in the trunk. Kart-Rak is steel-channel construction, fully adjustable for front tire hold-downs for all tread widths. Lightweight, easily mounted, comes painted with pads and tie-down straps for \$37.50 f.o.b. Order from Hoffco, Inc., 411 N. 8th St., Richmond, Ind.



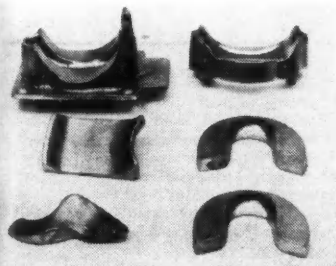
FRAME with steering, engine mount and one-wheel, semi-spot brake, jig-welded and factory-aligned of one-inch steel tube with 1/8-inch walls; includes back rest and belly pan, red lacquer finish, \$39.95 f.o.b. Also available in unwelded, unpainted kit form for the do-it-yourselfers at \$29.95. Order from Day and Night Speed Center, 9424 Roosevelt Way, Seattle 15, Wash.



FOR THE HOME BUILDER, complete plans that list materials and measurements are available for a simple-construction, low-cost kart (\$2); Min-A-Bike plans for tiny motorcycle, including front and rear suspension (\$3); and three kart plans and color sketches that also serve as wall decorations (\$1). Order singly, or all three for \$5, from Delta Design, Box 41001M, Los Angeles 41.



TWO 5.01-CUBIC-INCH kart engines are a matching pair for left- and right-wheel drive complete with mounting bracket for installation. Each uses needle and ball bearings throughout. Accessories include rewind starter, air cleaner, automatic clutch assemblies and assorted sprockets. These engines were fully tested on road-course kart tracks for stamina and performance. Weight is 10 lbs. 12 oz. each; price is \$98.75 each. Specify right or left to Homelite Div. of Textron, Inc., Port Chester, N.Y.



GENE WISE, well-known Yamaha tuner and rider, is manufacturing and selling crankcase and flywheel bushings for West Bend, Clinton and McCulloch two-stroke engines. These products are the result of Gene's wide experience with racing engines. For engine modification, Kart-stuff Accessories, or price list, contact Wise Two Stroke Shop, 7139 Laurel Canyon Blvd., North Hollywood, Calif.

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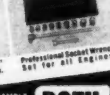
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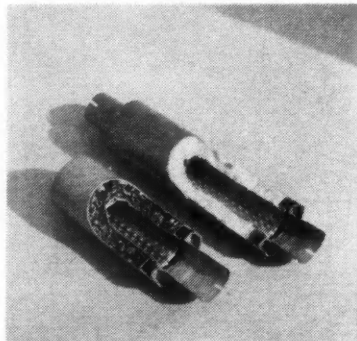
Douglass mufflers reveal sturdy design, offer choice of glass- or steel-pack

HOWARD DOUGLASS is a calm and quiet man who spends a lot of time and a lot of money buying competitors' products, installing them on cars or cutting them open for examination. This is, in the final analysis, the best and maybe the only way to keep abreast of the competition in a highly competitive and constantly changing market. Muffler production is a step-at-a-time kind of thing that lends itself to detail changes with no more than a momentary lull in production. Occasionally, Douglass makes such refinement in their muffler.

Behind the plant is a small pile of rusted mufflers that tells a big story. These are the guarantee jobs—the mufflers that came back on defect. After 22 years of making and selling mufflers, the pile is still small. "Not only that," said Douglass, "but most of them show mechanical damage, such as hitting rocks. No muffler is guaranteed against that. But that's the way it is with a guarantee, and we don't like to tell the customer that he's wrong."

Then, he cuts one of his own apart for inspection.

The Douglass muffler is of all-welded construction, with seamless outer tube. Core is longitudinally crimped at the seam, perforated inward, with the lips pressed over the end of the inner end cap. This construction allows the core, which is subjected to alternate heating



and cooling, to contract and expand in all directions without stressing welded joints. Resonance chambers are formed between these inner end caps and the outer ones, and provide tone. The flanges that mate with the tailpipe are welded at a pre-set angle to align with the twists and turns of the pipe under the car.

With Douglass, the relative merits of the glass-pack and the steel-pack are left to the purchaser, since he makes identical mufflers packed with either material and they sell for the same price—\$8.40 to \$13.35. Long-fiber glass will resist blowing out for a long time, and is lighter than the model packed with steel shavings. Of course, steel will not burn out. Take your choice: both mufflers are otherwise identical in material and construction, and are fully guaranteed against reasonable dissatisfaction by Douglass Muffler Co., 5636 E. Shull, Bell Gardens, Calif. They deserve the MOTOR TREND Seal of Approval.



About three million mufflers have come out through the doors since 1938, some with the Douglass name and others with other brand names that receive a lot more publicity. These latter are guaranteed by their sellers, while the guarantee on a Douglass muffler is to his dealers. The consumer works through his point of purchase; however, all mufflers are guaranteed for workmanship and material, and all the dealer has to do is return the defective unit that he has replaced. Generally, Howard does not even look at the returned muffler unless three or four come from the same dealer.

To qualify for a MOTOR TREND Use Test a manufacturer must first present his request for a test in writing to Testing Staff, MOTOR TREND, 5959 Hollywood Blvd., Los Angeles 28, Calif. In addition, before any item is accepted for testing, the manufacturer must sign a release agreeing to MOTOR TREND'S printing the complete, impartial test findings—whether the product be approved or disapproved. Only those products whose makers agree to these terms will be tested, and only those which are proved by actual use test to meet the manufacturer's advertised claims will be awarded the MOTOR TREND Seal of Approval, which may be displayed in advertisements of that particular product.

CLASSIC OF THE MONTH



'33 Rolls-Royce Phantom II

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MAGNIFICENT IS THE WORD to describe this truly classic example of Rolls-Royce beauty and engineering. Shipped to this country in 1930, the chassis (one of 100 built in England with left-hand drive) was fitted with a special body by Brewster—and reportedly sold for \$23,750 new in 1933. From its German silver radiator shell to its gently sloping rear deck this Phantom II model bespeaks

luxury. The front seat is upholstered in fawn-colored leather, the rear in matching broadcloth. Provision was made for a chauffeur division, though glass was not fitted in this car.

As with every Rolls-Royce, this car has many unusual features. The mechanical brakes are helped by a servo assist taken off the driveshaft—the faster the car is going, the greater the braking force exerted by this system. A chassis lubrication system, operated from the driver's seat, pumps oil to many points. (Owners were instructed to pump the foot pedal twice each morning before starting out, and then pump it again every 100 miles on longer trips.) Radiator shutters are thermostat-controlled.

The crankcase holds 1½ gallons of oil, which is changed once a year or every 10,000 miles. The fuel system has three filters to make sure the thirsty engine (10 mpg) gets only

pure gasoline—one filter is at the autovac, one at the dashboard, and one in the 28-gallon tank.

As you drive along in this regal beauty you sit up high—so high that you look down on other cars (in a figurative sense, too). At idling speed the 43.3-hp (RAC-rated) engine is silent; you have to look at the oil pressure gauge to make sure it is running.

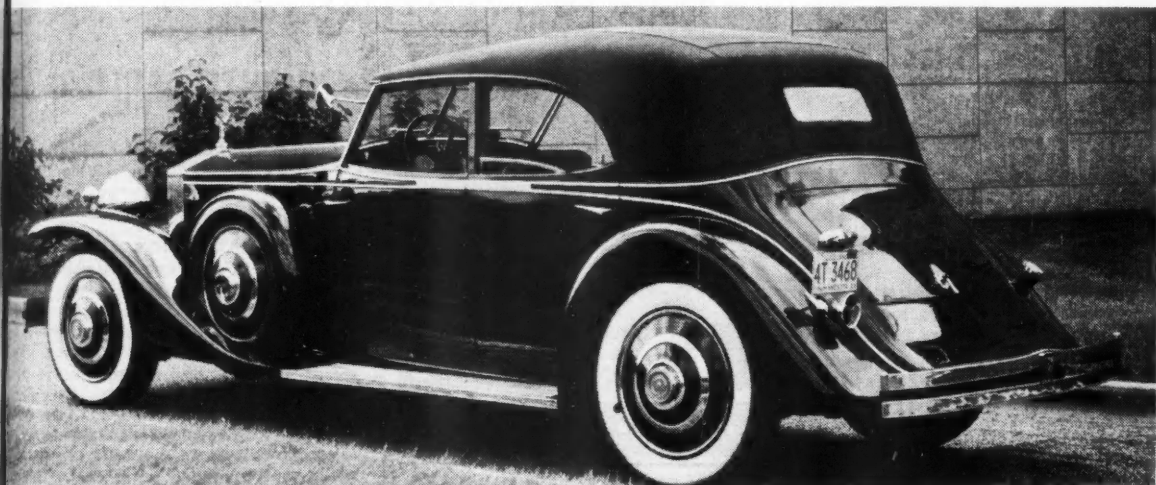
You push in the clutch, snick the gear-shift lever to the left and up for first gear, let out the velvet clutch and feed it the gas—and the car glides away. You shift gears carefully and deliberately, remembering the unsynchronized four-speed transmission.

There is some steering wheel "fight" noticeable at low speeds (which seems to be characteristic of the make), but it diminishes as speed is increased.

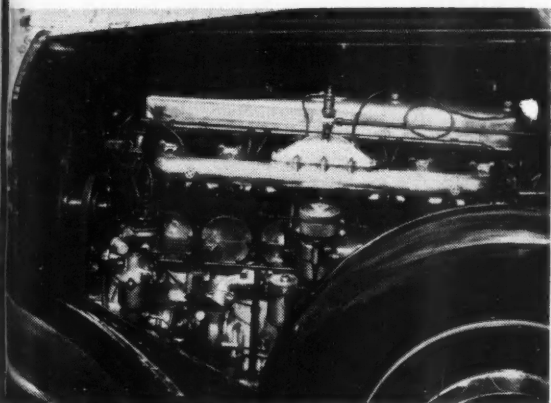
The car accelerates smoothly in second, third and fourth. If your foot gets tired of holding the accelerator down, you can set a governor control on the steering wheel to whatever speed you want, and the car will maintain that speed.

Owner Andrew Darling of Minneapolis is understandably proud of this classic—the favorite of his envied collection. "It's the last one I'd ever part with," he says. "It's a beautiful car—and besides, I've got too much invested in it."

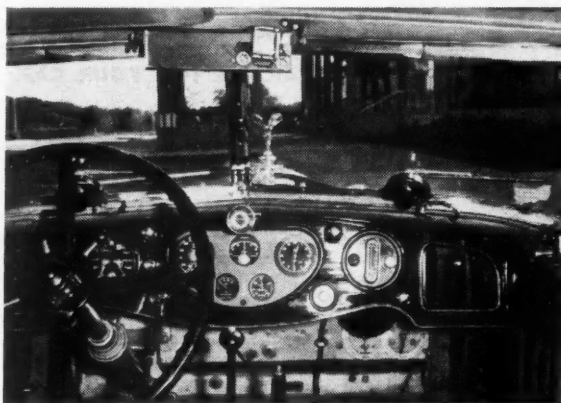
Photo Story by Tom Probst



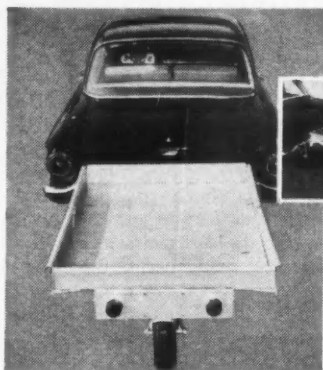
CLEAN FLOWING LINES OF ORIGINAL DESIGN ARE ENHANCED BY DISCS OVER THE WIRE WHEELS, ADDED PARTIAL FENDER SKIRTS.



Six-cylinder ohv engine has 4¼-in. bore, 5½-in. stroke, displaces 468 cu. ins. Each cylinder is fired by two spark plugs—one by battery ignition, the other by magneto. An extra carburetor for cold weather starts sits on top intake manifold.



Gleaming hand-rubbed wood dash contains array of gauges and controls for special features: starting carburetor, upper-cylinder oil, ignition selection (magneto and/or battery). At right of cast aluminum firewall are switches for fuel tanks.



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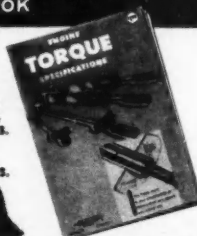
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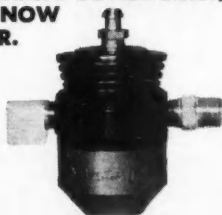
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IN MONTE CARLO RALLY

THE NEW 220-SE MERCEDES-BENZ sedans, in the hands of private owners but massively supported by works personnel under competition manager and ex-racing driver Karl Kling, annihilated the opposition in the 29th Monte Carlo Rally, taking first, second, third and fifth places and winning the team prize.

Winners were Walter Schock, fruit and vegetable importer, and Rolf Moll, road safety officer, both of Stuttgart. They completed the two laps of the terribly difficult mountain circuit with a total of only 15 seconds error at the many time controls en route.

In fourth place came a Sunbeam Rapier driven by Peter Harper and Raymond Baxter. For the second time in succession, the Ladies' Prize went to Pat Moss and Ann Wisdom on an Austin A-40. Two class awards went to Sunbeam, one each to Mercedes-Benz, Auto Union, VW, Peugeot, Saab, Alfa Giulietta, Citroën ID-19, Renault Alpine, Ford.

Choice of starting points entailed the usual gamble with the weather. Only four of the 14 Athens starters managed to fight their way through the deep snowdrifts of Yugoslavia, and by the time all routes converged at Chambéry only two—both ID-19 Citroëns—were left. The 31 starters from Lisbon met bad snow and ice which soon eliminated two-thirds of them; the survivors, with the Glasgow contingent, had a tough time in the notorious French Massif Central. It was to avoid this section and to get through the worst of the snow and ice early that Schock and Moll, the winners, had chosen to start from Warsaw.

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THE DEVIN "S.S." Pacific Coast Class "C" modified champion 4 starts, 4 finishes, 4 firsts in class, never worse than fourth overall. In street trim, absolutely stock with stock cast iron manifolds, flywheel, clutch and mufflers, with laminated safety glass windshield, and wipers, bumpers and full upholstery. Imagine 300 lbs. less weight and 100+ more horsepower. \$10,000.00* with folding soft top and side curtains.

THE DEVIN "D" The Devin "D" designed by Bill Devin offers exciting performance and touring comfort combined with economy of cost and operation. The car is complete with light tube frame, new design Devin body finished in acrylic lacquer with AS-1 laminated safety glass windshield, folding soft top and side curtains, carpets, upholstered bucket seats and chrome bumpers. Included are brake and fuel lines, wiring, head and tail lights, parking and directional lights, all hardware, including hinged hood and deck lids.

The Devin "D", including folding soft top, side curtains with all new Volkswagen components and 1192CC, 36 h.p. engine, **\$2950.00***. Optional 1300CC, 44 h.p. engine, **\$3150.00***. Heater and defroster extra, **\$30.00**.

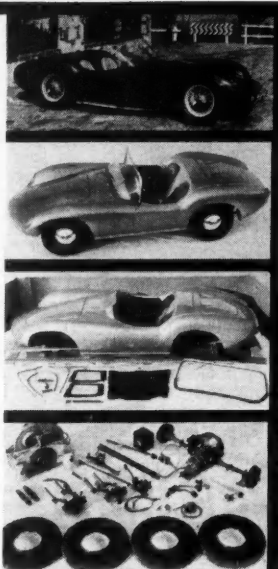
The Devin "D" may also be purchased as shown, less Volkswagen components and engine for **\$1,495.00***.

These Volkswagen components are all that are required to produce a finished touring sports car when assembled with the Devin "D" as listed for **\$1495.00***.

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Winners Schock/Moll weave their Mercedes 220-SE through icy, snow-banked route.

The 88 starters from Oslo had a fairly easy run, though there was plenty of ice. Crossing the border from Sweden to Denmark one has to switch from driving on the left to driving on the right. Resulting confusion is thought to have caused the death of Dutch driver Van Nieuwenhuyzen and injuries to his co-driver when their Alfa Romeo hit a truck.

Of the 297 who started, only 169 reached the rallying point at Chambéry; of these a mere 63 were penalized as they started after a brief 30-minute breather on the last critical and closely timed run of 360 miles to Monte Carlo.

Most competitors used spiked tires or snow tires. A few fitted chains but soon regretted it as they broke up under the strain of fast driving on ice. Unlike the majority of entrants, the winning Mercedes team relied on their special Dunlop nylon tires without spikes.

So 159 tired crews reached Monte Carlo to begin the long hours of waiting to learn who had qualified for the 13-hour final test. Some were notified only an hour before the midnight start, leaving them little time to prepare maps or time schedules—and none for sleep.

—Gordon Wilkins



Renault Alpine of Feret/Rambaud placed 18th, the highest GT car in general class.

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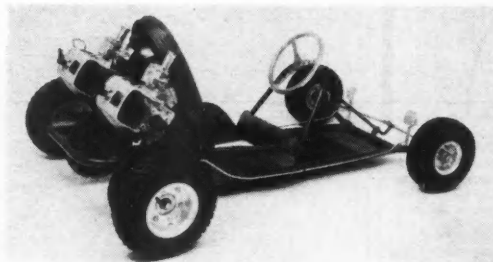
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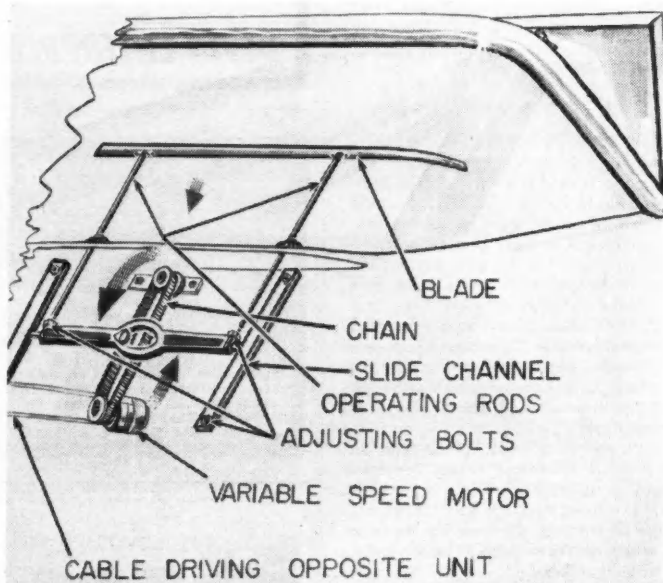
This sensational NEW 6-shot Rosco Vest Pocket .22 long revolver would be a tremendous value at 3 times its price. Made in W. Germany, it is a tight, well-made, exceedingly accurate handgun. Fires easy-to-get Win., Rem., Western & Peters .22 Long & Short ammo. Features side gate loading, trigger adjustment, screw-in ejector rod. Has STEEL RIFLED BARREL with blade front sights. Easy and fun to shoot. Terrific for target shooting, varmint hunting or as a home defense weapon. Only \$12.95. Leather holster \$2.95. 100 rds. of .22 long ammo \$1.30. Shipped F.O.B. Los Angeles, express charges collect. Send cash, check or M.O. COD's require \$7.50 deposit. Satisfaction guaranteed. Purchasers must be 18 years old. Res. of L.A. and vicinity, please purchase at our store.

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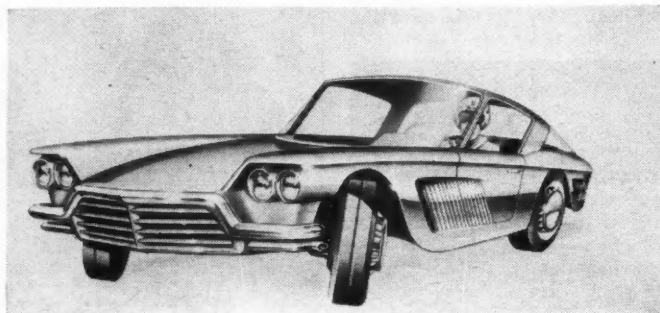
CUSTOM CAR CONTEST

PROJECT IDEAS

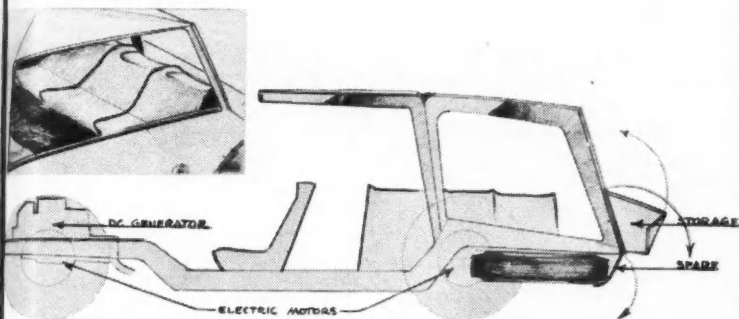
HERE ARE THE LAST MONTHLY WINNERS in our Project IDEAS design contest. These entries will be judged with previous winners in the respective classes for the three Grand Prizes, jointly awarded by MOTOR TREND and Revell, Inc. Judging will follow a review-study of all class winners and the final selections will be announced in a near-future issue.



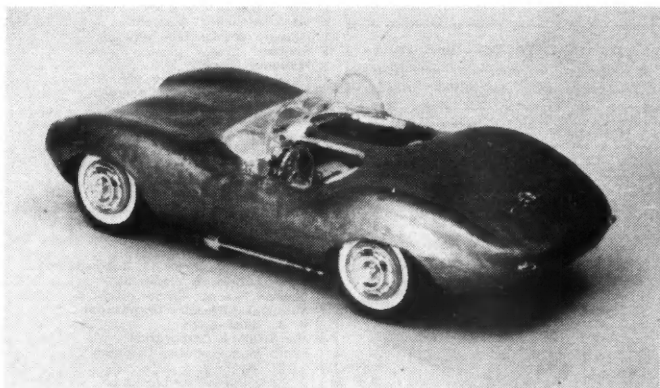
Senior winner Roger E. Williams of Lawton, Okla., proposes this vertical-motion bar-type windshield wiper that would clean the entire glass area.



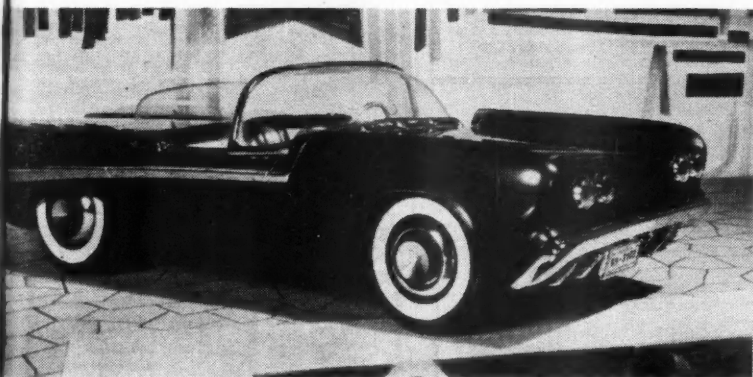
Sports-touring body by Kenneth W. Burgess Jr. of Plymouth, Mass., would drop onto stock Corvette frame, be powered by fuel-injected 283 engine.



Winner in Junior Class is Howard Itzkowitz of Brooklyn, N.Y., who designed this nine-passenger wagon with ribbed cantilever roof that eliminates "A" post. Six back seats, along the sides, are of fiberglass. A gasoline-powered DC generator drives an electric motor in each wheel.



Combining a Revell model D-Jag and Lincoln Futura, William R. Glass (13) of El Paso, Tex. submits design that wins in the Apprentice Class.



This 1/12th-scale model of a sleek convertible was made of fiberglass by David Koto of Birmingham, Mich. Rear-view mirrors are built into back of raised front fenders.

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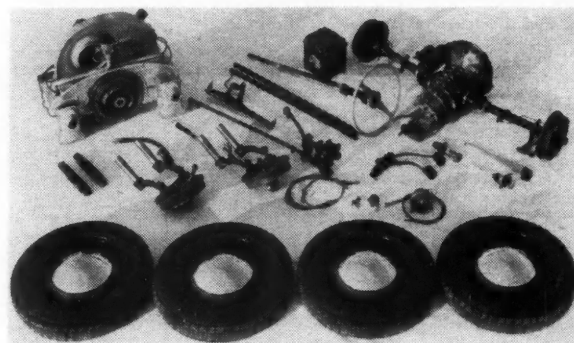
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A "D" FOR DEVIN

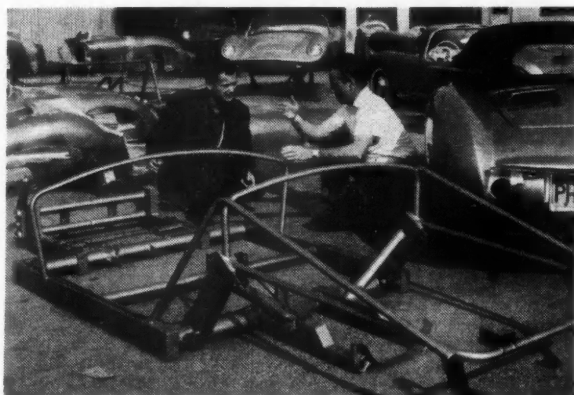
Bolt-on, do-it-yourself VW sports roadster kit offers striking design at low cost



Shown here are all the necessary parts to put the Devin D kit on the road. Local wrecking yards will usually yield a bodyless VW with enough parts for under \$500. Job then is strictly bolt-on with no welding, drilling, cutting or building required.

DO-IT-YOURSELF fiberglass auto fans tend to be hardy, pioneering types. We hope they don't feel hurt at the Devin "D"—a car that anyone who can handle a wrench can bolt together. There is absolutely no cutting, welding or drilling required. Just bolt on the stock Volkswagen components shown, have the front end aligned and drive away.

Reflecting real care and workmanship, the "D" is completely wired, painted, upholstered and ready to go except for engine and running gear. The price, less those components, is \$1495 and a check of local wrecking yards will nearly always turn up used VW sans body for under \$500. This puts you on the street in a sporty roadster for about \$2000. The alternative is the car with all new VW components for \$2950 (with optional Porsche engine for \$3350) already assembled by Devin. Less than 1200 pounds on the street, the Devin "D" scoots along in properly sporting manner—a sort of poor man's Ferrari.



Builder Bill Devin, right, points out rugged tube frame which forms heart of his D. Bodies and kits in various stages of completion await finishing at his El Monte, California factory.



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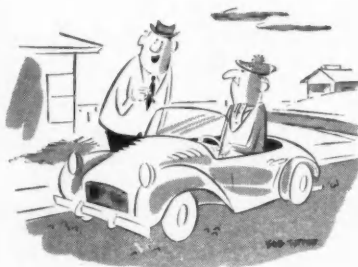
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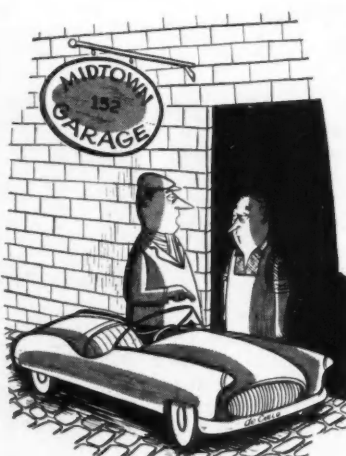
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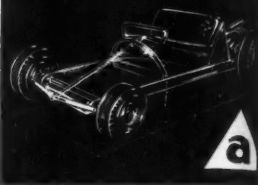


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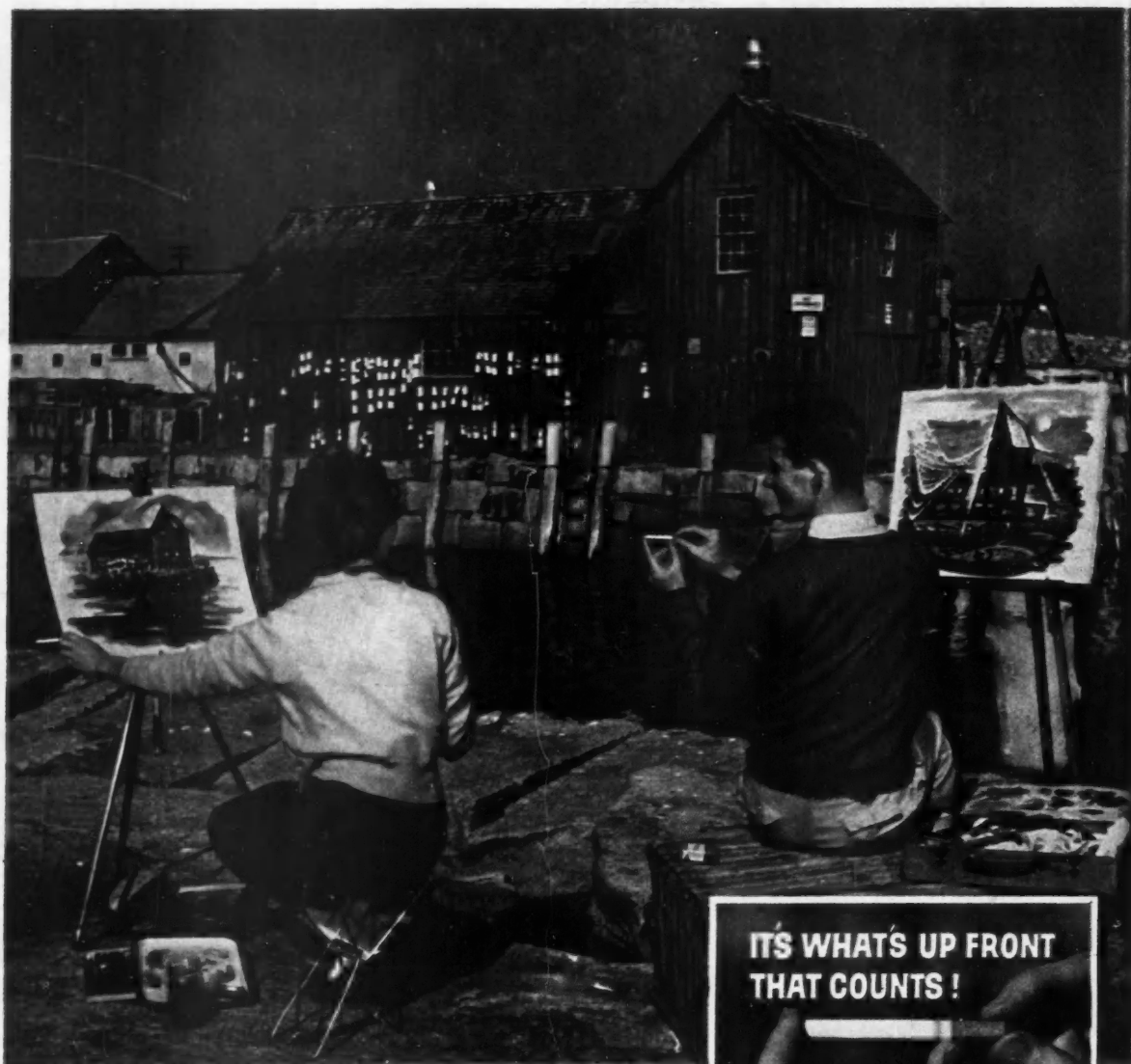
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